

Gly Asn Tyr Arg Gln Leu Thr Glu Asn Met Leu Pro Asn Thr Asp Thr
 305 310 315 320
 Ser Leu Pro Gln Glu Ile Ile Ala Gln Ile Arg Ser Phe Gln Asn Gly
 325 330 335
 Val Asn Gly Thr Ile Ile Ala Ser Asn Thr Leu Leu Pro Thr Thr Met
 340 345 350
 Arg Leu Asp Thr Leu Leu Gly Val Ile Tyr Thr Tyr Gln Cys Cys Ala
 355 360 365
 Thr Ile Phe Gly Met Ser Tyr Gly Thr Ser Thr Pro Ala Lys Gln Asn
 370 375 380
 Tyr Ile Asp Ala Ile Asn Gln Glu Lys Ser Tyr Trp Gln Ala Arg Ala
 385 390 395 400
 Asn Gly Phe Asp Val Thr Ser Asp Gln Val Phe Asp Gln Phe Ala Thr
 405 410 415
 Asn Ile Gln Ser Gly Thr Ser Tyr Arg Gly Ile Asp Leu Phe Lys Asn
 420 425 430
 Asn Lys Val Asn Glu Ile Asn Pro Ile Phe Leu Ser Gln Ala Ala Ser
 435 440 445
 Phe Leu Arg Tyr Pro Tyr Asn Leu Met Ser Arg Ser Met Tyr Gln Thr
 450 455 460
 Ile Glu Asp Ala Ala Asn Arg Ser Ile Thr Ala Leu Asp Gly Leu Ile
 465 470 475 480
 Ser Gly Trp Ser Thr Gln Ile Ala Thr Phe Gln Thr Gln Lys Asn Ser
 485 490 495
 Leu Asp Pro Ser Leu Leu Lys Tyr Phe Asp Thr Met Lys Ala Asn Lys
 500 505 510
 Glu Ser Phe Val Thr Thr Ala Pro Leu Gln Met Val Tyr Ser Ser Leu
 515 520 525
 Met Leu Asp Lys Tyr Leu Pro Thr Gln Gln Asn Val Ile Ala Ser Leu
 530 535 540
 Gly Ile Gln Met Thr Tyr Ser Asn Lys Ala Ala Lys Tyr Leu Asn Glu
 545 550 555 560
 Leu Ile Lys Glu Ile Thr Thr Phe Gln Ser Ala Asp Ile Tyr Tyr Ser
 565 570 575
 Leu Ser Ile Tyr Leu Lys Gln Met Asn Leu Gln Ala Val Ala Asp Pro
 580 585 590
 Ile Gly Lys Ala Val Gly Val Leu Asn Asp Glu Lys Thr Arg Ala Met
 595 600 605
 Ala Asp Ile Thr Arg Cys Asn Lys Ile Lys Ala Ala Ile Asp Lys Met
 610 615 620
 Leu Val Glu Ile Lys Ala Asp Ala Glu Leu Ser Lys Ser Gln Ile Arg
 625 630 635 640
 Glu Leu Val Asp Thr Leu Thr Asn Phe Lys Ser Gln Ser Asp Asp Leu
 645 650 655
 Ile Arg Asn Leu Ser Cys Leu Leu Gly Phe Leu Ser Gly Leu Thr Leu
 660 665 670
 Lys Ala Val Asn Asp Pro Asn Ala Thr Tyr Glu Ala Phe Thr Ala Glu
 675 680 685
 Ile Phe Thr Glu Pro Phe Asn Asn Trp Lys Arg Gln Leu Ala Thr Phe
 690 695 700
 Glu Ser Phe Val Ile Gln Gly Gly Gln Asn Gly Ile Thr Pro Gly Gly
 705 710 715 720
 Gln Gln Gln Leu Leu Gln Ala Met Glu Ser Ser Gln Gln Asp Phe Ser
 725 730 735
 Thr Phe Asn Gln Asn Gln Gln Leu Ala Leu Gln Leu Glu Ser Ser Ala
 740 745 750
 Met Gln Gln Glu Trp Thr Leu Val Ser Ala Ala Leu Ala Leu Leu Asn
 755 760 765
 Gln Met Val Ser Lys Ile Ala Arg Arg Ile Lys Ser
 770 775 780
 <210>921
 <211>391
 <212>PRT
 <213>Chlamydia pneumoniae

<400>921

```

Asn Ile Met His Pro Lys Ile Glu Lys Arg Asn Ser Leu Pro Leu Thr
 1           5           10           15
Ala Val Ala Pro Val Phe Glu Glu Ser Tyr His Pro Ser Val Ala Thr
          20           25           30
Thr Val Asp Tyr Val Asp Ala Thr Thr Leu Ser Arg His Leu Thr Val
          35           40           45
Leu Lys Asp Val Ile Lys Glu Ala Arg Asn Leu Asp Leu Gly Lys Ala
          50           55           60
Phe Leu Thr Ser Met Lys Gln Gly Phe Ile Asn Thr Gly Thr Glu Leu
          65           70           75           80
Ala Ile Ile Gln Ala Ser Leu Ala Asp Gln Ser Ser Arg Glu Ser Arg
          85           90           95
Lys Lys Glu Glu Lys Ile Phe His Gln His Leu Gly Lys Ala Ala Pro
          100          105          110
Gln Ala Ala Thr Ala Thr Ser Gly Val Gln Pro Thr Ala Asp Pro Val
          115          120          125
Ala Asp Lys Met Pro Leu Gln Ser Ala Phe Ala Tyr Val Leu Leu Asp
          130          135          140
Lys Tyr Ile Pro Ala Gln Glu Glu Ala Leu Tyr Ala Leu Gly Arg Glu
          145          150          155          160
Leu Asn Leu Ser Gly Tyr Ala Gln Asn Leu Phe Ser Pro Leu Leu Asp
          165          170          175
Met Ile Lys Ser Phe Asn Ser Ala Pro Ile Asn Tyr Asn Leu Gly Ser
          180          185          190
Tyr Ile Ser Gln Thr Ser Gly Thr Ala Asn Phe Ala Tyr Gly Tyr Glu
          195          200          205
Met Ile Leu Ser Arg Tyr Asn Asn Glu Val Ser Gln Cys Arg Leu Asp
          210          215          220
Ile Ala Ser Thr Val Lys Ala Lys Ala Ala Leu Ala Asn Met Ser Ala
          225          230          235          240
Ser Val Lys Ala Asn Val Ser Leu Thr Asp Ala Gln Lys Lys Gln Ile
          245          250          255
Glu Asp Ile Ile Ala Ser Tyr Thr Lys Ser Leu Asp Val Ile His Thr
          260          265          270
Gln Leu Thr Asp Val Met Thr Asn Leu Ala Ser Ile Thr Phe Val Pro
          275          280          285
Gly Leu Asn Lys Tyr Asp Pro Ser Tyr Arg Ile Val Gly Gly Asp Leu
          290          295          300
Ser Ile Ile Ala Leu Gln Asn Asp Glu Lys Val Leu Val Asp Gly Lys
          305          310          315          320
Val Asp Ile Thr Thr Ala Val Asn Glu Gly Gly Leu Leu Asn Phe Phe
          325          330          335
Thr Thr Val Leu Thr Asp Val Gln Asn Tyr Gly Asp Leu Ala Gln Thr
          340          345          350
Gln Gln Leu Met Leu Asp Leu Glu Leu Lys Ala Met Gln Gln Gln Trp
          355          360          365
Ser Leu Val Ser Ala Ser Leu Lys Leu Leu Asn Gly Met Tyr Thr Thr
          370          375          380
Val Ile Ser Gly Phe Lys Asn
          385          390

```

<210>922

<211>348

<212>PRT

<213>Chlamydia pneumoniae

<400>922

```

Gly Pro Phe Asp Met Asn Ser Lys Met Leu Lys His Leu Arg Leu Ala
 1           5           10           15
Thr Leu Ser Phe Ser Met Phe Phe Gly Ile Val Ser Ser Pro Ala Val
          20           25           30
Tyr Ala Leu Gly Ala Gly Asn Pro Ala Ala Pro Val Leu Pro Gly Val
          35           40           45
Asn Pro Glu Gln Thr Gly Trp Cys Ala Phe Gln Leu Cys Asn Ser Tyr
          50           55           60

```


Asp Leu Phe Ala Ala Leu Ala Gly Ser Leu Lys Phe Gly Phe Tyr Gly
 65 70 75 80
 Asp Tyr Val Phe Ser Glu Ser Ala His Ile Thr Asn Val Pro Val Ile
 85 90 95
 Thr Ser Val Thr Thr Ser Gly Thr Gly Thr Thr Pro Thr Ile Thr Ser
 100 105 110
 Thr Thr Lys Asn Val Asp Phe Asp Leu Asn Asn Ser Ser Ile Ser Ser
 115 120 125
 Ser Cys Val Phe Ala Thr Ile Ala Leu Gln Glu Thr Ser Pro Ala Ala
 130 135 140
 Ile Pro Leu Leu Asp Ile Ala Phe Thr Ala Arg Val Gly Gly Leu Lys
 145 150 155 160
 Gln Tyr Tyr Arg Leu Pro Leu Asn Ala Tyr Arg Asp Phe Thr Ser Asn
 165 170 175
 Pro Leu Asn Ala Glu Ser Glu Val Thr Asp Gly Leu Ile Glu Val Gln
 180 185 190
 Ser Asp Tyr Gly Ile Val Trp Gly Leu Ser Leu Gln Lys Val Leu Trp
 195 200 205
 Lys Asp Gly Val Ser Phe Val Gly Val Ser Ala Asp Tyr Arg His Gly
 210 215 220
 Ser Ser Pro Ile Asn Tyr Ile Ile Val Tyr Asn Lys Ala Asn Pro Glu
 225 230 235 240
 Ile Tyr Phe Asp Ala Thr Asp Gly Asn Leu Ser Tyr Lys Glu Trp Ser
 245 250 255
 Ala Ser Ile Gly Ile Ser Thr Tyr Leu Asn Asp Tyr Val Leu Pro Tyr
 260 265 270
 Ala Ser Val Ser Ile Gly Asn Thr Ser Arg Lys Ala Pro Ser Asp Ser
 275 280 285
 Phe Thr Glu Leu Glu Lys Gln Phe Thr Asn Phe Lys Phe Lys Ile Arg
 290 295 300
 Lys Ile Thr Asn Phe Asp Arg Val Asn Phe Cys Phe Gly Thr Thr Cys
 305 310 315 320
 Cys Ile Ser Asn Asn Phe Tyr Tyr Ser Val Glu Gly Arg Trp Gly Tyr
 325 330 335
 Gln Arg Ala Ile Asn Ile Thr Ser Gly Leu Gln Phe
 340 345

<210>923

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>923

Met Lys Gln His Ile Gly Tyr Leu Gly Met Gly Ile Trp Gly Phe Cys
 1 5 10 15
 Leu Ala Ser Leu Leu Ala Asn Lys Gly Tyr Pro Val Val Ala Trp Ser
 20 25 30
 Arg Asn Pro Asp Leu Ile Lys Gln Leu Gln Glu Glu Arg Arg His Pro
 35 40 45
 Leu Ala Pro Asn Val Val Ile Ser Pro Asn Leu Ser Phe Thr Thr Asp
 50 55 60
 Met Lys Glu Ala Ile His Asn Ala Phe Met Ile Val Glu Gly Val Thr
 65 70 75 80
 Ser Ala Gly Ile Arg Pro Val Ala Glu Gln Leu Lys Gln Ile Thr Asp
 85 90 95
 Leu Ser Val Pro Phe Val Ile Thr Ser Lys Gly Ile Glu Gln Asn Thr
 100 105 110
 Gly Leu Leu Leu Ser Glu Ile Met Leu Glu Val Leu Gly Asp Ser Val
 115 120 125
 Thr Pro Tyr Leu Gly Tyr Leu Ser Gly Pro Ser Ile Ala Lys Glu Val
 130 135 140
 Leu Asn Gly Ser Pro Cys Ser Val Val Val Ser Ala Tyr Asp Ser Gln
 145 150 155 160
 Thr Leu Lys Gln Ile His Glu Ala Phe Ser Leu Pro Thr Phe Arg Val
 165 170 175
 Tyr Pro Asn Thr Asp Ile Lys Gly Ala Ala Leu Gly Gly Ala Leu Lys

```

      180      185      190
Asn Val Ile Ala Ile Ala Cys Gly Ile Ala Glu Gly Leu Ser Phe Gly
      195      200      205
Asn Asn Ala Lys Ala Gly Leu Val Thr Arg Gly Leu His Glu Met Arg
      210      215      220
Lys Leu Ala Ala Ile Met Asp Cys Lys Pro Glu Thr Leu Asn Gly Leu
      225      230      235
Ala Gly Leu Gly Asp Leu Cys Val Thr Cys Phe Ser Glu Ser Ser Arg
      245      250      255
Asn Leu Arg Phe Gly His Leu Leu Ala Gln Gly Leu Thr Phe Glu Gln
      260      265      270
Ala Lys Ala Lys Ile Gly Met Val Val Glu Gly Ala Tyr Thr Ala Leu
      275      280      285
Ser Ala Tyr Gln Val Ala Lys His His Lys Ile Asp Met Pro Ile Thr
      290      295      300
Thr Gly Ile Tyr Arg Val Leu Tyr Glu Asn Leu Asp Leu Lys Glu Gly
      305      310      315
Ile Ala Leu Leu Leu Gln Arg Asn Thr Lys Glu Glu Phe Leu
      325      330

```

<210>924

<211>461

<212>PRT

<213>Chlamydia pneumoniae

<400>924

```

Met Thr Glu Ser Val Tyr Ser Pro Ser Ala Met His Val Asn Ser Leu
  1      5      10      15
Ala Asp Lys Leu Lys Ala Ile Asn Gln Glu His Ile Leu Asp Ile Trp
      20      25      30
Pro Ser Leu Ser Pro Lys Gln Gln Gln Arg Leu Phe Gln Gln Leu Thr
      35      40      45
Ser Val Asp Ile Asp Phe Phe Arg Lys Gln Gln Gln Leu Leu Ser Ser
      50      55      60
Pro Thr Ala Ile Leu Lys Asp Phe His Pro Ile Thr Ser Phe Ala Ser
      65      70      75      80
Ser Gly Glu Asp Pro Glu Arg Ala His Ala Gly Thr Thr Leu Leu Lys
      85      90      95
Glu Lys Lys Val Ala Cys Val Val Leu Ala Gly Gly Gln Gly Ser Arg
      100      105      110
Leu Lys Cys Asp Gly Pro Lys Gly Leu Phe Pro Val Ser Pro Ile Lys
      115      120      125
Lys Lys Pro Leu Phe Gln Leu Val Ala Glu Lys Val Arg Ala Ala Ser
      130      135      140
Lys Leu Ala Gly Gln Pro Leu Pro Leu Ala Phe Met Thr Ser Pro Leu
      145      150      155      160
Asn Thr Arg Gln Thr Arg Ser Phe Phe Glu Ser Asn Asp Tyr Phe His
      165      170      175
Leu Asp Pro Asn Gln Val Asp Phe Phe Cys Gln Pro Leu Trp Pro Leu
      180      185      190
Leu Thr Leu Ser Gly Asp Leu Phe Leu Glu Asp Met Asp Thr Leu Ala
      195      200      205
Leu Gly Pro Asn Gly Asn Gly Cys Ile Ala Thr Leu Leu Tyr Thr Ser
      210      215      220
Gly Val Trp Glu Lys Trp Lys Asn Ala Gly Ile Glu Met Val Ser Val
      225      230      235      240
Ile Pro Ile Asp Asn Pro Leu Ala Leu Pro Phe Asp Val Glu Leu Cys
      245      250      255
Gly Phe His Ala Met Ser Asn Asn Glu Val Thr Ile Lys Ala Ala Leu
      260      265      270
Arg Gln Thr Ala Ile Glu Asp Val Gly Ile Leu Val Lys Ser His Asp
      275      280      285
Ser Gly Lys Thr Ser Val Ile Glu Tyr Ser Glu Ile Pro Gln Asn Glu
      290      295      300
Arg Phe Ala Leu Asn Glu Asp Gly Lys Leu Lys Tyr Cys Leu Ala Asn
      305      310      315      320

```

Ile Gly Leu Tyr Cys Leu Ser Met Asp Phe Ile Arg His Ala Ala Tyr
 325 330 335
 Gln Gln Leu Pro Leu Tyr Lys Val His Lys His Ala Lys Gln Leu Gly
 340 345 350
 His Thr Ser Leu Asn Glu Lys Asn Ala Trp Lys Phe Glu Glu Phe Ile
 355 360 365
 Phe Asp Leu Phe Cys Tyr Ser Asp His Cys Gln Thr Leu Val Tyr Pro
 370 375 380
 Arg Gln Glu Cys Phe Ala Pro Leu Lys Asn Leu Glu Gly Asn His Ser
 385 390 395 400
 Pro Asp Thr Val Arg Gln Ala Leu Ser Asp Arg Glu Arg Gln Leu Phe
 405 410 415
 His Lys Val Thr Gly Lys Lys Leu Ser Pro Asn Thr Thr Phe Glu Leu
 420 425 430
 Glu Ala Asp Phe Tyr Tyr Pro Ser Thr Ser Thr Ser Leu His Trp Glu
 435 440 445
 Asn Lys Ala Phe Phe Glu Glu Pro Phe Phe Glu Ala Ser
 450 455 460
 <210>925
 <211>433
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>925
 Met Asn His Leu Asn Lys Glu Lys Leu His Ile His Asn Trp Gln Pro
 1 5 10 15
 Tyr Arg Ala Cys Gly Leu Leu Ser Lys Val Ser Gly Asn Leu Ile Glu
 20 25 30
 Val Asp Gly Leu Ser Ala Cys Leu Gly Glu Leu Cys Lys Ile Ser Ser
 35 40 45
 Thr Lys Asp Pro Asn Leu Leu Ala Glu Val Ile Gly Phe His Asn His
 50 55 60
 Thr Thr Leu Leu Met Ser Leu Ser Pro Leu His Ser Val Ala Leu Gly
 65 70 75 80
 Thr Glu Val Leu Pro Leu Arg Arg Pro Pro Ser Leu His Leu Ser Asp
 85 90 95
 His Leu Leu Gly Arg Val Leu Asp Ala Phe Gly Asn Pro Ile Asp Lys
 100 105 110
 Lys Glu Asp Leu Pro Lys Thr His Arg Lys Pro Leu Leu Ser Leu Pro
 115 120 125
 Pro Ser Pro Met Met Arg Gln Pro Ile Asp Gln Ile Phe Pro Thr Gly
 130 135 140
 Ile Lys Ala Ile Asp Ala Phe Leu Thr Leu Gly Lys Gly Gln Arg Ile
 145 150 155 160
 Gly Val Phe Ser Glu Pro Gly Ser Gly Lys Ser Ser Leu Leu Ser Ala
 165 170 175
 Ile Ala Leu Gly Ser Lys Ser Thr Ile Asn Val Ile Ala Leu Ile Gly
 180 185 190
 Glu Arg Gly Arg Glu Val Arg Glu His Ile Glu Lys His Ser Asn Ala
 195 200 205
 Leu Lys Gln Gln Arg Thr Ile Ile Ile Ala Ala Pro Ala His Glu Thr
 210 215 220
 Ala Pro Thr Lys Val Ile Ala Gly Arg Ala Ala Met Thr Ile Ala Glu
 225 230 235 240
 Tyr Phe Arg Glu Gln Gly His Glu Val Leu Phe Ile Met Asp Ser Leu
 245 250 255
 Ser Arg Trp Ile Ala Ala Leu Gln Glu Val Ala Leu Ala Arg Gly Glu
 260 265 270
 Thr Leu Ser Ala His Gln Tyr Ala Ala Ser Val Phe His His Val Ser
 275 280 285
 Glu Phe Thr Glu Arg Ala Gly Asn Asn Asp Lys Gly Ser Ile Thr Ala
 290 295 300
 Leu Tyr Ala Ile Leu Tyr Tyr Pro Lys His Pro Asp Ile Phe Thr Asp
 305 310 315 320
 Tyr Leu Lys Ser Leu Leu Asp Gly His Phe Phe Leu Thr Ser Gln Gly

325 330 335
 Lys Ala Leu Ala Ser Pro Pro Ile Asp Ile Leu Ser Ser Leu Ser Arg
 340 345 350
 Ser Ala Gln Ala Leu Ala Leu Pro His His Tyr Ala Ala Ala Glu Arg
 355 360 365
 Leu Arg Ser Leu Leu Lys Val Tyr Asn Glu Ala Leu Asp Ile Ile His
 370 375 380
 Leu Gly Ala Tyr Thr Pro Gly Gln Asp Glu Glu Leu Asp Lys Ala Val
 385 390 395 400
 Lys Leu Leu Pro Ser Ile Lys Ala Phe Leu Ala Gln Pro Leu Ser Ser
 405 410 415
 Tyr Cys Tyr Leu Asp Asn Thr Leu Lys Gln Leu Glu Ala Leu Ala Asp
 420 425 430
 Ser

<210>926

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>926

Met Ile His Ala Val Lys Thr Glu Ser Arg Trp Ser Ser Ser Ser Leu
 1 5 10 15
 Ile Ser Cys Leu Arg Ile Pro Leu Gly Val Ser Ile Leu Asn Pro Asp
 20 25 30
 Arg Leu Gln Glu Val Ser Gly Lys Asn Ser Ala Cys Leu Ile Met Gly
 35 40 45
 Ser Ser Trp Val Glu Ile Gln Ser Val Ser Val Leu Arg Ser Ser Gly
 50 55 60
 Trp Arg Asn Thr Leu Met Gly Val Arg Asp Leu Asn Val Val Cys Leu
 65 70 75 80
 Trp Ser Ala Val Glu Arg Ser Arg Ala Ser Ser
 85 90

<210>927

<211>266

<212>PRT

<213>Chlamydia pneumoniae

<400>927

Met Thr Leu Pro Leu Glu Pro Met Ile Phe Trp Ser Ser Leu Ser Ala
 1 5 10 15
 Lys Val Met Lys Lys Phe Leu Thr Pro His Cys Ala Gly Thr Phe Ser
 20 25 30
 Glu Glu Asp Ala Glu Ala Lys Glu Ala His Leu Val Thr Gly Lys Gln
 35 40 45
 Gly His Arg Leu Met Gly Asn Cys Val Thr Phe Tyr Trp Leu Val Asp
 50 55 60
 Lys Lys Asn Gly Val Ile Leu Asp Ala Lys Phe Gln Tyr Phe Gly His
 65 70 75 80
 Pro Tyr Leu Ile Pro Leu Ala Glu Ala Val Cys Asn Leu Val Cys Gly
 85 90 95
 Lys Ser Tyr Ser Glu Ala Tyr Lys Met Thr Leu Asp Asp Ile Asp Lys
 100 105 110
 Ser Leu Arg Val His Ala His Gln Pro Ala Leu Pro Glu Asp Ser Ile
 115 120 125
 Ser Leu Tyr His Phe Val Ile Asp Ala Leu Asp Thr Ala Val Glu Gln
 130 135 140
 Cys Leu Glu Ile Pro Leu Glu Asp Gly Ser Leu Pro Leu Gln Asn Ser
 145 150 155 160
 Pro Met Asn Leu Asp Phe Glu Asp Ala Asn Pro Tyr Ser Gln Ser Asp
 165 170 175
 Trp Glu Ala Leu Thr His Glu Gln Lys Leu Tyr Ala Leu Arg Ala Thr
 180 185 190
 Ile Ala Glu Lys Ile Gly Pro Tyr Ile Ala Met Asp Gly Gly Glu Val
 195 200 205
 Thr Val Glu Ser Leu Glu Asn Phe Ile Val Thr Ile Ala Tyr Ser Gly

210 215 220
 Asn Cys Ser Gly Cys Pro Ser Ser Leu Gly Ser Thr Leu Asn Ser Ile
 225 230 235 240
 Gly Gln Leu Leu Arg Ala Tyr Ile Tyr Pro Glu Leu Gln Val Lys Val
 245 250 255
 Asp Glu Ser Ser Leu Asn Leu Ser His Pro
 260 265
 <210>928
 <211>401
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>928
 Gly Arg Gly Thr Ile Phe Arg Ile Thr Asp Gly Lys Thr Ser Cys Ile
 1 5 10 15
 Ser Met Glu Lys Pro Gln Asn Arg Lys Ala Pro Arg Ile Phe Trp Leu
 20 25 30
 Asn Asn Gln Val Ala Ile Pro Pro Ser Glu Arg Val Lys Glu Ser Tyr
 35 40 45
 Ala Leu His Ser Asp Ile Phe Ser Leu Pro Pro Gly Ser Ala Leu Lys
 50 55 60
 Leu Ala Glu Lys Thr Glu Glu Ser Ile Arg Gln Leu Val Gly Leu Lys
 65 70 75 80
 Asp Ser His Ile Phe Arg Phe Val Pro His Phe Pro His Val Val His
 85 90 95
 Ile Val Leu Ala Leu Val Glu Asn Leu Ser Met Phe Gln Gly Arg
 100 105 110
 Asn His Ile Ile Leu Pro Ala His Asp Gln Gln Leu Leu Ile Asn Ser
 115 120 125
 Leu Cys Arg His Gln Gly Leu Gly Thr Thr Tyr Asp Trp Val Thr Val
 130 135 140
 Asn His Glu Gly Arg Ile Val Glu Glu Gln Leu Ile Glu Thr Leu Ser
 145 150 155 160
 Pro Arg Ser Leu Leu Phe Ser Leu Ser Ala Ala His Gly Leu Thr Gly
 165 170 175
 Val Ile Gln Pro Leu Asp Pro Leu Leu Ser Leu Cys Lys Asp Arg Arg
 180 185 190
 Ile Leu Leu His Leu Asp Ile Ser Asp Ile Leu Gly Arg Ala Pro Leu
 195 200 205
 Thr Pro Glu Ile Leu Asn Ala Asp Ile Ile Thr Phe Ser Ser Ala Ala
 210 215 220
 Leu Gly Gly Met Gly Ser Ile Gly Gly Ile Phe Ile Arg Lys Ser Leu
 225 230 235 240
 Glu Arg Val Phe Ser Ser Trp Phe Pro Pro His Thr Ser Ala Ser Leu
 245 250 255
 Cys Phe Ser Ala Val Ala Ala Met Gln Thr Ala Cys Glu Glu Arg Ile
 260 265 270
 Ser Ala Leu Pro Leu Phe Thr Phe His Thr Ser Asn Leu Cys Lys Lys
 275 280 285
 Leu Ile Gln Glu Leu Gln Ser Val Leu Pro Ser Ile Gln Leu Ala Phe
 290 295 300
 Ser Glu Val Gln Asn Arg Leu Pro Asn Ile Val Val Ala Ala Ile Pro
 305 310 315 320
 Asp Ile Pro Ala Glu Ser Leu Ala Phe His Leu His Gln Gln Gly Ile
 325 330 335
 Tyr Pro Ser Leu Gly Tyr Glu Arg Phe Gln Pro Leu Ala Gln Val Leu
 340 345 350
 Gln Asn Cys Gly Ile Ser Pro Phe Leu Cys His Ser Ala Leu His Phe
 355 360 365
 Ser Leu Thr Glu Arg Ser Lys Asp Leu Glu Phe Ser Lys Leu Ala Arg
 370 375 380
 Ala Met His Asp Ala Ile Lys His Leu Thr Pro Leu Leu Gly Ser Ser
 385 390 395 400
 Ser

<210>929

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>929

```

Met Ala Leu Leu Ile Leu Leu Arg His Gly Gln Ser Val Trp Asn Glu
 1           5           10           15
Lys Asn Leu Phe Ser Gly Trp Val Asp Ile Pro Leu Ser Gln Gln Gly
           20           25           30
Ile Glu Glu Ala Phe Ser Ala Gly Arg Ala Ile Gln Asn Leu Pro Ile
           35           40           45
Asp Cys Ile Phe Thr Ser Thr Leu Val Arg Ser Leu Met Thr Ala Leu
 50           55           60
Leu Ala Met Thr Asn His Ser Lys Lys Ile Pro Tyr Ile Val His
 65           70           75           80
Glu Asp Pro Lys Ala Lys Glu Met Ser Arg Ile Tyr Ser Ala Glu Glu
           85           90           95
Glu Asn Asn Met Ile Pro Leu Tyr Gln Ser Ser Ala Leu Asn Glu Arg
           100          105          110
Met Tyr Gly Glu Leu Gln Gly Lys Asn Lys Lys Gln Thr Ala Glu Gln
           115          120          125
Phe Gly Glu Glu Arg Val Lys Leu Trp Arg Arg Ser Tyr Lys Thr Ala
 130          135          140
Pro Pro Gln Gly Glu Ser Leu Tyr Asp Thr Lys Gln Arg Thr Leu Pro
 145          150          155          160
Tyr Phe Glu Lys Asn Ile Leu Pro Gln Leu Gln Asn Gly Lys Asn Val
           165          170          175
Phe Val Ser Ala His Gly Asn Ser Leu Arg Ser Leu Ile Met Asp Leu
           180          185          190
Glu Lys Leu Ser Glu Glu Glu Val Leu Ser Leu Glu Leu Pro Thr Gly
 195          200          205
Lys Pro Val Val Tyr Gln Trp Lys Asn His Lys Ile Glu Lys His Pro
 210          215          220
Glu Phe Phe Gly
225

```

<210>930

<211>235

<212>PRT

<213>Chlamydia pneumoniae

<400>930

```

Val Thr Lys Val Arg Leu Asn Lys Phe Leu Ala Ser Ala Gly Val Ala
 1           5           10           15
Ser Arg Arg Lys Cys Asp Glu Ile Ile Phe Ser Gly Ser Val Thr Val
           20           25           30
Asn Gly Arg Val Ala Glu Gly Pro Phe Val Leu Val Asp Pro Glu Asp
 35           40           45
Lys Val Gln Val Gly Gly Thr Ser Val His Leu Thr Lys Lys Val Tyr
 50           55           60
Phe Met Val His Lys Ala Ile Gly Tyr Leu Cys Ser Ser Glu Lys Lys
 65           70           75           80
Phe Pro Gly Thr Lys Leu Val Ile Asp Leu Phe Ala His Leu Pro Tyr
           85           90           95
Arg Val Phe Thr Val Gly Arg Leu Asp Lys Glu Thr Ser Gly Leu Ile
           100          105          110
Leu Val Thr Asn Asp Gly Glu Phe Ala Asn Lys Ile Ile His Pro Ser
 115          120          125
Ser Gly Ile Thr Lys Glu Tyr Leu Leu Lys Val Ser Arg Asp Val Ser
 130          135          140
Ala Lys Asp Leu Gly Lys Leu Met Glu Gly Thr Phe Ile Asp Gly Lys
 145          150          155          160
His Val Arg Pro Val Ser Val Thr Lys Ile Arg Arg Gly Thr Val Lys
           165          170          175
Ile Val Val Ser Glu Gly Lys Lys His Glu Ile Arg Leu Phe Ala Asp
           180          185          190

```

Ala Ala Gly Leu Pro Ile Leu Glu Leu Lys Arg Ile Arg Ile Gly Ser
 195 200 205
 Leu Val Leu Gly Gly Leu Arg Tyr Gly Glu Tyr Arg Glu Leu Thr Asp
 210 215 220
 Ala Glu Leu Gly Thr Tyr Met Lys Leu Ser Asp
 225 230 235

<210>931

<211>193

<212>PRT

<213>Chlamydia pneumoniae

<400>931

Asn Met Lys Val Ile Tyr Tyr Glu Ile Glu Glu Ile Pro Ser Thr Asn
 1 5 10 15
 Thr Met Ala Lys Ser Tyr Met His Leu Trp Asp Pro Tyr Ala Leu Thr
 20 25 30
 Val Ile Ser Thr Lys Cys Gln Thr Ala Gly Thr Gly Lys Phe Gly Lys
 35 40 45
 Ser Trp Lys Ser Ser Lys Gly Asp Leu Leu Asn Thr Phe Cys Phe Phe
 50 55 60
 Ile Thr Asp Leu His Ile Asp Val Ser Arg Leu Phe Arg Leu Gly Thr
 65 70 75 80
 Glu Ala Val Val Ala Leu Cys Lys Asp Leu Gly Ile Thr Glu Ala Lys
 85 90 95
 Ile Lys Trp Pro Asn Asp Val Leu Val His Gly Glu Lys Leu Cys Gly
 100 105 110
 Val Leu Pro Glu Thr Leu Pro Val Glu Gly Leu Leu Gly Val Val Leu
 115 120 125
 Gly Ile Gly Leu Asn Gly Asn Thr Thr Lys Gln Ala Leu Lys Asp Val
 130 135 140
 Gly Gln Pro Ala Thr Ser Leu Gln Glu Ile Leu Gly His Pro Ile Asp
 145 150 155 160
 Leu Glu Thr Thr Arg Glu Leu Leu Ile His His Leu Leu Gly Val Leu
 165 170 175
 Gln Glu Asn Leu Pro Asp Ser Leu Ala Thr Lys Ser Asn Arg Gly Asn
 180 185 190
 Ile

<210>932

<211>421

<212>PRT

<213>Chlamydia pneumoniae

<400>932

Cys Ile Arg Ile Pro Gln Met His Ile Gly Phe Cys His Cys Val Arg
 1 5 10 15
 Gly Gly Asn Phe Phe Tyr Phe Val Ile Asn Asn Phe His Ile Leu Glu
 20 25 30
 Ile Tyr Ser Leu Leu Asn Ser Asn Thr Ile Met Arg Tyr His Lys Tyr
 35 40 45
 Phe Arg Tyr Val Asn Ser Trp Val Phe Leu Val Val Leu Thr Leu Met
 50 55 60
 Leu Leu Ser Val Val Val Ile Ser Ser Met Asp Pro Thr Ala Met Leu
 65 70 75 80
 Val Thr Ser Ser Lys Gly Leu Leu Thr Asn Lys Ser Ile Met Gln Leu
 85 90 95
 Arg His Phe Ala Leu Gly Trp Val Val Phe Phe Ile Cys Ala Tyr Phe
 100 105 110
 Asp Tyr His Leu Phe Lys Arg Trp Ala Trp Val Leu Tyr Phe Phe Met
 115 120 125
 Ile Cys Ala Leu Val Gly Leu Phe Phe Val Pro Ser Val Gln Asn Val
 130 135 140
 His Arg Trp Tyr Arg Ile Pro Phe Ile His Met Ser Val Gln Pro Ser
 145 150 155 160
 Glu Tyr Gly Lys Leu Val Ile Val Ile Met Leu Ser Tyr Ile Leu Glu
 165 170 175

Ser Arg Lys Ala Asp Ile Thr Ser Lys Thr Thr Ala Phe Leu Ala Cys
 180 185 190
 Leu Val Val Ala Leu Pro Phe Phe Leu Ile Leu Lys Glu Pro Asp Leu
 195 200 205
 Gly Thr Ala Leu Val Leu Cys Pro Val Thr Leu Thr Ile Phe Tyr Leu
 210 215 220
 Ser Asn Val His Ser Leu Leu Val Lys Phe Cys Thr Val Val Ala Thr
 225 230 235 240
 Ile Gly Ile Ile Gly Ser Leu Leu Ile Phe Ser Gly Ile Val Ser His
 245 250 255
 Gln Lys Val Lys Pro Tyr Ala Leu Lys Val Ile Lys Glu Tyr Gln Tyr
 260 265 270
 Glu Arg Leu Ser Pro Ser Asn His His Gln Arg Ala Ser Leu Ile Ser
 275 280 285
 Ile Gly Leu Gly Gly Ile Arg Gly Arg Gly Trp Lys Thr Gly Glu Phe
 290 295 300
 Ala Gly Arg Gly Trp Leu Pro Tyr Gly Tyr Thr Asp Ser Val Phe Ser
 305 310 315 320
 Ala Leu Gly Glu Glu Phe Gly Leu Leu Gly Leu Leu Phe Thr Leu Gly
 325 330 335
 Leu Phe Tyr Cys Leu Ile Cys Phe Gly Cys Arg Thr Val Ala Val Ala
 340 345 350
 Thr Asp Asp Phe Gly Lys Leu Leu Ala Ala Gly Ile Thr Val Tyr Leu
 355 360 365
 Ala Met His Val Leu Ile Asn Ile Ser Met Met Cys Gly Leu Leu Pro
 370 375 380
 Ile Thr Gly Val Pro Leu Ile Leu Ile Ser Tyr Gly Gly Ser Ser Val
 385 390 395 400
 Ile Ser Thr Met Ala Ser Leu Gly Val Leu Gln Ser Ile Tyr Ser His
 405 410 415
 Arg Phe Ala Lys Tyr
 420

<210>933

<211>392

<212>PRT

<213>Chlamydia pneumoniae

<400>933

Ile Phe Phe Ser Ile Cys Ser Leu Tyr Phe Cys Asn Cys Leu Trp Asn
 1 5 10 15
 Cys Pro Phe Gly Ser Phe Ile Tyr Phe His Ser Ile Val Arg Thr Ser
 20 25 30
 Glu Cys Ile Leu Pro Cys Pro Ser Val Ser Tyr Cys Ser Val Ser Val
 35 40 45
 Cys Phe Asp His Cys Asp Ser Tyr Cys Leu Phe Lys Cys Tyr Gln Cys
 50 55 60
 Leu Cys Glu Thr Trp Gly Ser Xaa Glu Arg Arg Cys Val Leu Asp Arg
 65 70 75 80
 Leu Val Ser Cys Asn Ser Val Val Met Asp Lys Thr Gly Thr Leu Thr
 85 90 95
 Thr Gly Glu Leu Thr Cys Ile Gly Cys Asp Tyr Phe Gly Ser Lys Asn
 100 105 110
 Glu Thr Phe Phe Pro Ser Val Leu Ala Leu Glu Gln Ser Ser Ser His
 115 120 125
 Pro Ile Ala Glu Ala Ile Val Ser Tyr Leu Met Glu Gln Lys Val Ser
 130 135 140
 Ser Leu Pro Ala Asp Arg Tyr Leu Thr Val Pro Gly Glu Gly Val Arg
 145 150 155 160
 Gly Tyr Phe Asn Glu Gln Glu Ala Phe Val Gly Arg Val Glu Thr Gly
 165 170 175
 Leu Gly Lys Val Pro Ser Glu Tyr Leu Glu Asp Ile Glu Gln Lys Ile
 180 185 190
 Tyr Gln Ala Lys Gln His Gly Glu Ile Cys Ser Leu Ala Tyr Val Gly
 195 200 205
 Asn Ser Phe Ala Leu Phe Tyr Phe Arg Asp Ile Pro Arg Pro Gln Ala

210 215 220
 Lys Glu Ile Ile Gln Asp Leu Lys Asp Leu Gly Tyr Pro Val Ser Met
 225 230 235 240
 Leu Thr Gly Asp His Lys Val Ser Ala Glu Asn Thr Ala Glu Ile Leu
 245 250 255
 Gly Ile Ser Glu Val Phe Phe Asp Leu Thr Pro Glu Asp Lys Leu Ala
 260 265 270
 Lys Ile Arg Glu Leu Ala Thr Gln Arg Gln Ile Met Met Val Gly Asp
 275 280 285
 Gly Ile Asn Asp Ala Pro Ala Leu Ala Gln Ala Thr Val Gly Ile Ala
 290 295 300
 Met Gly Glu Ala Gly Ser Ala Thr Ala Ile Glu Ala Ala Asp Ile Val
 305 310 315 320
 Leu Leu His Asp Ser Leu Ser Ser Leu Pro Trp Ile Ile Gln Lys Ala
 325 330 335
 Lys Gln Thr Lys Lys Val Val Ser Gln Asn Leu Ala Leu Ala Leu Ala
 340 345 350
 Ile Ile Leu Leu Val Ser Trp Pro Ala Ser Leu Gly Ile Ile Pro Leu
 355 360 365
 Trp Leu Ala Val Ile Leu His Glu Gly Ser Thr Val Ile Val Gly Leu
 370 375 380
 Asn Ala Leu Arg Leu Leu Lys Ser
 385 390
 <210>934
 <211>373
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>934
 Asn Phe Arg Asn Gly Leu Gly Val Arg Asp Leu His His Phe Arg Glu
 1 5 10 15
 Tyr Tyr Leu Ile Ile Asn Glu Ile Ile Ile Thr Gly Arg Tyr Val Phe
 20 25 30
 Ser Arg Leu Phe Phe Thr Ser Phe Ser Ala Glu Val Val Asn Thr Phe
 35 40 45
 Phe Glu Ser Gly Met Ser Glu Asp Thr Ser Pro Leu Leu Ser Lys Gln
 50 55 60
 Asn Arg Lys Leu Ser His Asn Leu Pro Leu Lys Ser Ala Tyr Leu Ser
 65 70 75 80
 Leu Gly Thr Tyr Leu Ile Ala Leu Leu Ser Phe Trp Leu His Ala Lys
 85 90 95
 Asn Leu Ser Asn Leu Phe Val Val Phe Thr Phe Phe Leu Ala Gly Thr
 100 105 110
 Pro Ala Leu Ile Lys Ser Leu Val Asn Ile Cys Gln Lys Val Val Asn
 115 120 125
 Ile Asp Ile Leu Met Thr Ser Ala Pro Phe Gly Ser Ile Phe Ile Gly
 130 135 140
 Gly Ala Leu Glu Gly Ala Leu Leu Leu Val Leu Phe Ala Ile Ser Glu
 145 150 155 160
 Ala Leu Gly Gln Met Val Ser Gly Lys Ala Lys Ser Thr Leu Val Ser
 165 170 175
 Leu Lys Gln Leu Ala Pro Thr Thr Gly Trp Leu Val Leu Glu Asp Gly
 180 185 190
 Asn Leu Gln Lys Val Ala Ile Asn Lys Ile Glu Val Gly Asn Ile Leu
 195 200 205
 Arg Ile Lys Ser Gly Glu Val Val Pro Leu Asp Gly Glu Ile Leu His
 210 215 220
 Gly Ser Ser Ser Ile Asn Leu Met His Leu Thr Gly Glu Lys Val Pro
 225 230 235 240
 Lys Ser Cys His Pro Gly Ser Ile Val Pro Ala Gly Ala His Asn Met
 245 250 255
 Glu Gly Ser Phe Asp Leu Arg Val Leu Arg Thr Gly Ser Asp Ser Thr
 260 265 270
 Ile Ala His Ile Ile Asn Leu Val Ile Gln Ala Gln Asn Ser Lys Pro
 275 280 285

Arg Leu Gln Gln Arg Leu Asp Lys Tyr Ser Ser Val Tyr Ala Leu Ser
 290 295 300
 Ile Phe Ala Ile Ala Cys Gly Ile Ala Leu Leu Val Pro Leu Phe Thr
 305 310 315 320
 Ser Ile Pro Leu Leu Gly Pro Gln Ser Ala Phe Tyr Arg Ala Leu Ala
 325 330 335
 Phe Leu Ile Ala Ala Ser Pro Cys Ala Leu Ile Ile Ala Ile Pro Ile
 340 345 350
 Ala Tyr Leu Ser Ala Ile Asn Ala Cys Ala Lys His Gly Val Leu Xaa
 355 360 365
 Lys Gly Gly Val Phe
 370

<210>935

<211>274

<212>PRT

<213>Chlamydia pneumoniae

<400>935

Glu Gly Trp Arg Phe Phe Phe Pro Lys Thr Ser Glu Asn Thr Ser Asp
 1 5 10 15
 Cys Arg Gln His Gln Ile Leu Arg Lys Ile Met Thr Gln Asp Pro His
 20 25 30
 Asp His Phe Lys Ser Arg Thr Pro Glu Asp His Ile Lys His Val Arg
 35 40 45
 Asp Lys His Arg Val Cys Lys Gly Glu Pro His Thr Thr Phe Lys Gly
 50 55 60
 Phe Phe Tyr His Leu Ala Asn Asn Ala Leu Ser Thr Gly Val Phe Ile
 65 70 75 80
 Phe Phe Ile Arg Thr Leu Phe Phe Leu Ile Pro Thr Asn Arg Ala Leu
 85 90 95
 Gln Val Lys Ser Leu Ile Ser Leu Gly Val Gly Trp Thr Phe Tyr His
 100 105 110
 Gly Cys Leu Lys Ala Arg Lys Ala Trp Ala Tyr Met Glu Leu Ser His
 115 120 125
 Arg Ser Met Leu Glu Glu Lys Asn Glu Ile Glu Glu Asn Phe Glu Gln
 130 135 140
 Glu Lys Ile Glu Leu Arg Ile Leu Phe Glu Asn Gln Gly Phe Lys Asp
 145 150 155 160
 Pro Leu Leu Gln Glu Met Val Glu Tyr Val Cys Ser Asp Ser Thr Leu
 165 170 175
 Leu Leu Asp Thr Met Ile Arg Glu Glu Leu Tyr Ile Arg Lys Glu Asp
 180 185 190
 Leu Pro His Pro Leu Ile Gln Gly Gly Ser Arg Ile Leu Gly Gly Leu
 195 200 205
 Cys Gly Leu Ala Ile Phe Leu Pro Leu Val Leu Cys Ile Ser Tyr Thr
 210 215 220
 Leu Ala Gly Val Phe Ser Ala Leu Met Val Leu Val Leu Ser Phe Leu
 225 230 235 240
 Lys Ala Lys Ile Leu Lys Asn Asp Lys Ile Ser Glu Met Val Trp Val
 245 250 255
 Leu Gly Ile Phe Ile Thr Ser Ala Ser Ile Ile Ser Ser Leu Met Lys
 260 265 270
 Leu Leu

<210>936

<211>466

<212>PRT

<213>Chlamydia pneumoniae

<400>936

Val Ile Leu Pro Phe Ser Pro Ile Ser Ile Ala Arg Arg Ile Lys Lys
 1 5 10 15
 Ser Cys Cys Ser Glu Lys Ser Ser Ile Tyr Ser His Phe Cys Thr Leu
 20 25 30
 Leu Leu Asn Glu Thr Ser Met Leu Asp Ile Lys Ile Arg Lys
 35 40 45

Thr Pro Glu Glu Cys Glu Thr Arg Leu Arg Lys Lys Asp Pro Lys Ile
 50 55 60
 Ser Leu Glu Pro Val Leu Ser Leu Asp Lys Glu Val Arg Gln Leu Lys
 65 70 75 80
 Thr Asp Ser Glu Thr Leu Gln Ala Gln Arg Arg Leu Leu Ser Gln Asp
 85 90 95
 Ile His Lys Ala Lys Thr Gln Gly Val Asp Ala Thr Asn Leu Ile Gln
 100 105 110
 Glu Val Glu Thr Leu Ala Ala Asp Leu Glu Lys Ile Glu Gln His Leu
 115 120 125
 Asp Gln Lys Asn Ala Gln Leu His Glu Leu Leu Ser His Leu Pro Asn
 130 135 140
 Tyr Pro Ala Asp Asp Ile Pro Val Ser Glu Asp Lys Ala Gly Asn Gln
 145 150 155 160
 Val Ile Lys Ser Val Gly Asp Leu Pro Ile Phe Ser Phe Pro Pro Lys
 165 170 175
 His His Leu Glu Leu Asn Gln Glu Leu Asp Ile Leu Asp Phe Gln Ala
 180 185 190
 Ala Ala Lys Thr Thr Gly Ser Gly Trp Pro Ala Tyr Lys Asn Arg Gly
 195 200 205
 Val Leu Leu Glu Trp Ala Leu Leu Thr Tyr Met Leu Gln Lys Gln Ala
 210 215 220
 Ala His Gly Phe Gln Leu Trp Leu Pro Pro Leu Leu Val Lys Lys Glu
 225 230 235 240
 Ile Leu Phe Gly Ser Gly Gln Ile Pro Lys Phe Asp Gly Gln Tyr Tyr
 245 250 255
 Arg Val Glu Asp Gly Glu Gln Tyr Leu Tyr Leu Ile Pro Thr Ala Glu
 260 265 270
 Val Val Leu Asn Gly Phe Arg Ser Gln Asp Ile Leu Thr Glu Lys Glu
 275 280 285
 Leu Pro Leu Tyr Tyr Ala Ala Cys Thr Pro Cys Phe Arg Arg Glu Ala
 290 295 300
 Gly Ala Ala Gly Ala Gln Glu Arg Gly Leu Val Arg Val His Gln Phe
 305 310 315 320
 His Lys Val Glu Met Phe Ala Phe Thr Thr Pro Asn Gln Asp Asp Ile
 325 330 335
 Ala Tyr Glu Lys Met Leu Ser Ile Val Glu Glu Met Leu Thr Glu Leu
 340 345 350
 Lys Leu Pro Tyr Arg Leu Ser Leu Leu Ser Thr Gly Asp Met Ser Phe
 355 360 365
 Thr Xaa Ser Lys Thr Ile Asp Ala Glu Val Trp Leu Pro Gly Gln Lys
 370 375 380
 Ala Phe Tyr Glu Val Ser Ser Ile Ser Gln Cys Thr Asp Phe Gln Ser
 385 390 395 400
 Arg Arg Ser Gly Thr Arg Tyr Lys Asp Ser Gln Gly Lys Leu Gln Phe
 405 410 415
 Val His Thr Leu Asn Gly Ser Gly Leu Ala Thr Pro Arg Leu Leu Val
 420 425 430
 Ala Ile Leu Glu Asn Asn Gln Gln Ala Asp Gly Ser Val Val Ile Pro
 435 440 445
 Glu Val Leu Arg Pro Tyr Leu Gly Gly Leu Glu Ile Leu Leu Pro Lys
 450 455 460
 Asp Gln
 465
 <210>937
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>937
 Met Glu Asp Phe Ser Glu Gln Gln Leu Phe Phe Met Arg Arg Ala Ile
 1 5 10 15
 Glu Ile Gly Glu Lys Gly Arg Ile Thr Ala Pro Pro Asn Pro Trp Val
 20 25 30
 Gly Cys Val Val Val Gln Glu Asn Arg Ile Ile Gly Glu Gly Phe His

35 40 45
 Ala Tyr Ala Gly Gly Pro His Ala Glu Glu Leu Ala Ile Gln Asn Ala
 50 55 60
 Ser Met Pro Ile Ser Gly Ser Asp Val Tyr Val Ser Leu Glu Pro Cys
 65 70 75 80
 Ser His Phe Gly Ser Cys Pro Pro Cys Ala Asn Leu Leu Ile Lys His
 85 90 95
 Lys Val Ser Arg Val Phe Val Ala Leu Val Asp Pro Asp Pro Lys Val
 100 105 110
 Ala Gly Gln Gly Ile Ala Met Leu Arg Gln Ala Gly Ile Gln Val Tyr
 115 120 125
 Val Gly Ile Gly Glu Ser Glu Ala Gln Ala Ser Leu Gln Pro Tyr Leu
 130 135 140
 Tyr Gln Arg Thr His Asn Phe Pro Trp Thr Ile Leu Lys Ser Ala Ala
 145 150 155 160
 Ser Val Asp Gly Gln Val Ala Asp Ser Gln Gly Lys Ser Gln Trp Ile
 165 170 175
 Thr Cys Pro Glu Ala Arg His Asp Val Gly Lys Leu Arg Ala Glu Ser
 180 185 190
 Gln Ala Ile Leu Val Gly Ser Arg Thr Val Leu Ser Asp Asp Pro Trp
 195 200 205
 Leu Thr Ala Arg Gln Pro Gln Gly Met Leu Tyr Pro Lys Gln Pro Leu
 210 215 220
 Arg Val Val Leu Asp Ser Arg Gly Ser Val Pro Pro Thr Ser Lys Val
 225 230 235 240
 Phe Asp Lys Thr Ser Pro Thr Leu Tyr Val Thr Thr Glu Arg Cys Pro
 245 250 255
 Glu Asn Tyr Ile Lys Val Leu Asp Ser Leu Asp Val Pro Val Leu Leu
 260 265 270
 Thr Glu Ser Thr Pro Ser Gly Val Asp Leu His Lys Val Tyr Glu Tyr
 275 280 285
 Leu Ala Gln Lys Lys Ile Leu Gln Val Leu Val Glu Gly Gly Thr Thr
 290 295 300
 Leu His Thr Ser Leu Leu Lys Glu Arg Phe Val Asn Ser Leu Val Leu
 305 310 315 320
 Tyr Ser Gly Pro Met Ile Leu Gly Asp Gln Lys Arg Pro Leu Val Gly
 325 330 335
 Val Leu Gly Asn Leu Leu Glu Ser Ala Ser Pro Leu Thr Leu Lys Ser
 340 345 350
 Ser Gln Ile Leu Gly Asn Ser Leu Lys Val Val Trp Glu Ile Ser Pro
 355 360 365
 Gln Val Phe Glu Pro Ile Arg Asn
 370 375
 <210>938
 <211>418
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>938
 Met Ile Glu Thr Arg Glu Glu Val Gly Ser Ala Asn Phe Val Ser Leu
 1 5 10 15
 Glu Arg Ala Ile Glu Asp Leu Arg Ala Gly Lys Phe Val Ile Val Val
 20 25 30
 Asp Glu Ala Ser Arg Glu Asp Glu Gly Asp Leu Ile Ile Ala Gly Glu
 35 40 45
 Lys Ile Thr Val Glu Lys Met Thr Phe Leu Leu Gln His Thr Thr Gly
 50 55 60
 Val Val Cys Ala Ala Leu Ser Gln Glu Arg Leu Leu Ser Leu Asp Leu
 65 70 75 80
 Pro Pro Met Val Lys Asp Asn Arg Cys Arg Phe Lys Thr Pro Phe Thr
 85 90 95
 Val Ser Val Asp Ala Ala His Gly Val Thr Thr Gly Val Ser Ala Ala
 100 105 110
 Asp Arg Thr Lys Val Val Gln Leu Leu Ala Asp Pro Lys Ser Lys Pro
 115 120 125

Glu Asp Phe Ile Ser Pro Gly His Phe Phe Pro Leu Ala Ser Ser Pro
 130 135 140
 Gly Gly Val Leu Lys Arg Ala Gly His Thr Glu Ser Thr Val Asp Leu
 145 150 155 160
 Met Glu Leu Ala Gly Leu Gln Pro Cys Gly Val Leu Ala Glu Leu Val
 165 170 175
 Asn Glu Asp Tyr Ser Met Met Arg Leu Pro Gln Ile Leu Glu Phe Ala
 180 185 190
 Arg Lys His Asn Ile Ala Val Ile Pro Val Thr Ser Ile Ile Ala His
 195 200 205
 Arg Met Leu Ser Asp Arg Leu Val Ser Lys Ile Ser Ser Ala Arg Leu
 210 215 220
 Pro Thr Ile Tyr Gly Asp Phe Thr Ile His Val Tyr Glu Ser Leu Leu
 225 230 235 240
 Glu Gly Met Gln His Leu Ala Leu Val Lys Gly Asn Val Ala Gly Lys
 245 250 255
 Ser Asn Val Leu Val Arg Val His Ser Glu Cys Val Thr Gly Asp Ile
 260 265 270
 Leu Gly Ser Lys Arg Cys Asp Cys Gly Glu Gln Leu Ser Ser Ala Met
 275 280 285
 Ser Tyr Ile Ala Glu Lys Gly Thr Gly Val Leu Val Tyr Leu Arg Gly
 290 295 300
 Gln Glu Gly Arg Gly Ile Gly Leu Gly His Lys Val Arg Ala Tyr Ala
 305 310 315 320
 Leu Gln Asp Asn Gly Tyr Asp Thr Val Asp Ala Asn Leu Ala Met Gly
 325 330 335
 Phe Pro Val Asp Ser Arg Glu Tyr Gly Ile Gly Ala Gln Ile Xaa Ile
 340 345 350
 Asp Leu Xaa Leu Thr Thr Ile Lys Leu Ile Thr His Asn Pro Gln Lys
 355 360 365
 Tyr Phe Gly Leu Gln Gly Phe Gly Leu Ser Ile Thr Glu Arg Val Pro
 370 375 380
 Leu Pro Val Arg Ile Ser Glu Asp Asn Glu Gln Tyr Leu Arg Thr Lys
 385 390 395 400
 Gln Glu Arg Met Gly His Trp Leu Asp Leu Pro Cys Cys Asn Asn Arg
 405 410 415
 Val Gln

<210>939

<211>154

<212>PRT

<213>Chlamydia pneumoniae

<400>939

Met Lys Thr Leu Lys Gly His Leu Ser Ala Lys Asn Leu Arg Ile Ala
 1 5 10 15
 Ile Val Gly Ser Cys Phe Asn Gln Ala Met Ala Asp Ala Leu Val Ser
 20 25 30
 Gly Thr Gln Glu Thr Phe Leu Lys Phe Gly Gly Ser Glu Asp Gly Leu
 35 40 45
 Met Thr Ile Arg Val Pro Gly Ala Phe Glu Ile Pro Cys Thr Ile Lys
 50 55 60
 Lys Leu Leu Ser Ser Glu Arg Lys Phe Asp Ala Ile Val Ala Cys Gly
 65 70 75 80
 Val Leu Ile Gln Gly Glu Thr Asp His Tyr Asn Gln Ile Val Asn Gln
 85 90 95
 Val Ala Ala Gly Ile Gly Ala Leu Ser Leu Glu Phe Cys Leu Pro Ile
 100 105 110
 Thr Leu Ser Ile Val Ala Ala Pro Ser Ala Glu Ile Ala Trp Gln Arg
 115 120 125
 Ser Gly Ile Lys Gly Arg His Leu Gly Val Ser Gly Met Thr Thr Ala
 130 135 140
 Ile Glu Met Ala Thr Leu Phe Thr Gln Ile
 145 150
 <210>940

<211>472

<212>PRT

<213>Chlamydia pneumoniae

<400>940

```

Leu Ile Ser Leu Asn Leu Lys Ile Leu Thr Lys Gln Arg Asp Arg Glu
 1           5           10           15
Glu Ala Ser Met Leu Lys Ile Leu Lys Ile Lys Val Leu Val Phe Pro
          20          25          30
Leu Ala Leu Leu Met Gly Cys Asn Ser Ile Gly Tyr Ala Gly Pro Gln
          35          40          45
Gly Ser Leu Gln Thr Asn Ser Gln Thr Lys Val Lys Ile Gly Ser Glu
          50          55          60
Val Trp Ile Glu Gln Lys Leu Arg Gln Tyr Pro Glu Leu Leu Trp Leu
          65          70          75          80
Thr Glu Ser Gly Gly Ala Pro Leu Leu Thr Ser Thr Pro Ile Asp Met
          85          90          95
Ala Tyr Ser Glu Lys Leu Phe Asn Lys Lys Val Pro Ala Leu Asp Ile
          100         105         110
Ala Ile Arg Ser Met Ile His Leu His Leu Leu Ile Gln Gly Ser Arg
          115         120         125
Gln Ser Tyr Met Gln Leu Ser Gln Ile Leu Pro Ser Glu Glu Gly Gly
          130         135         140
Met Thr Phe Lys Gln Phe Gln Thr Ala His Lys Gln Leu Leu Phe Phe
          145         150         155         160
Leu Asn Ser Pro Lys Ser Phe Asp Asn Thr Leu Arg Ile Leu Glu Thr
          165         170         175
Ala Ile Val Leu Arg His Val Gly Cys Ser Ala Lys Ala Val Thr Thr
          180         185         190
Phe Lys Pro Tyr Phe Thr Asp Ser Cys Pro Gln Ser Phe Tyr Ala Lys
          195         200         205
Ala Leu His Val Leu Arg Thr Phe Pro Glu Leu Cys Pro Ser Tyr Ala
          210         215         220
Arg Leu Ser Pro Glu Gln Gln Glu Val Leu Leu Ser Leu Arg Arg Leu
          225         230         235         240
Gly Asn Tyr Asp Ser Leu Leu Asn Leu Thr Glu Val Pro Ser Ala Gln
          245         250         255
Leu Leu Ser Ala Trp Arg Thr Arg Arg Ser Leu Ala Ile Leu Asp Leu
          260         265         270
Tyr Leu Tyr Cys Leu Asp Thr Cys Gly Asp Lys Asn Cys Ser Gln Glu
          275         280         285
Phe Tyr Ile Asn Phe Ala Pro Leu Leu Ser Met Leu Gln Gln His Ala
          290         295         300
Thr Ile Glu Glu Ala Phe Ser Arg Tyr Phe Thr Tyr Arg Ala Asn Arg
          305         310         315         320
Leu Gly Phe Glu Gly Thr Ser Arg Thr Asp Met Thr Leu Val Arg Leu
          325         330         335
Ala Thr Leu Met Asn Leu Ser Pro Ser Glu Ala Ser Thr Leu Ala Trp
          340         345         350
Ser Phe Lys Asn Leu Pro Ser Asp Glu Ala Glu Asn Leu Val Asn Ser
          355         360         365
Phe Tyr Thr Val Gln Gly Glu His Ile Pro Leu Thr Phe Arg Gly Leu
          370         375         380
Pro Ser Leu Val Ala Gly Leu Ser Val Ala Thr His Gly Ser Thr Val
          385         390         395         400
Ser Pro Glu Asn Arg Leu Arg Gln Leu Tyr Ser Thr Met Leu Ser Leu
          405         410         415
Leu Val Lys Ser Leu Arg Ser His Arg Glu Met Leu Asn Lys Gln Leu
          420         425         430
Leu Pro Gln Gly Thr Val Leu Asp Phe Ser Glu Thr Thr Leu Ser Ser
          435         440         445
Gly Gly Leu Asp Val Phe Ala Glu Ser Ile Ala Val Arg Ile His Leu
          450         455         460
Asn Gly Ala Val Ser Ile Asn Leu
          465         470

```

<210>941

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>941

```

Leu Lys Ile Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu
 1          5          10          15
Thr Leu Leu Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr
          20          25          30
Asn Leu Glu Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile
          35          40          45
Leu Lys Glu Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg
          50          55          60
Arg Ser Arg Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr
          65          70          75          80
Leu Gln Val Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu
          85          90          95
Gln Asp Glu Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys
          100          105          110
Ser Ser Ile Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu
          115          120          125
Tyr Arg Ile Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala
          130          135          140
Glu Asn Pro Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp
145          150          155          160
Trp Ile Trp Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln
          165          170          175
Ala Trp Ser Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala
          180          185          190
Ser Thr Leu Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly
          195          200          205
Glu Arg Trp Pro Glu Leu Val Asp Ile Val Ile Thr
          210          215          220

```

<210>942

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>942

```

Gln Glu Ile Leu Ala Arg Glu Ile Ser Pro Glu Cys Cys Arg Leu Ser
 1          5          10          15
Leu Trp Arg Ser Arg Arg Pro Gly Leu Gly Leu Leu Ala Ala Leu Leu
          20          25          30
Gly Ala Ile Val Gln Tyr Ala Gly Ser Tyr Leu Gly Ser Lys Tyr Arg
          35          40          45
Lys Pro Glu Gly Asn Thr Gly Glu Phe Ile Gly Gly Pro Ile Ala Cys
          50          55          60
Leu Ala Phe Gly Met Arg Lys Lys Ile Leu Ala Gly Phe Phe Ala Leu
          65          70          75          80
Phe Thr Ile Met Thr Ala Phe Cys Ala Gly Asn Cys Val Gln Val Ser
          85          90          95
Cys Ile Val Pro Leu Cys Ala Glu Gly Thr Pro Gly Lys Leu Leu Val
          100          105          110
Gly Ile Leu Leu Ala Leu Val Val Ile Pro Val Leu Ala Gly Gly Asn
          115          120          125
Asn Arg Ile Leu Arg Phe Ser Ala Arg Val Ile Pro Phe Ile Ala Gly
          130          135          140
Phe Tyr Cys Ile Ser Cys Gly Ile Ile Leu Phe Gln His Ala Ser Ala
145          150          155          160
Ile Leu Pro Ala Ile Lys Leu Ile Cys Ser Ser Ala Phe Gly Ile Lys
          165          170          175
Ala Gly Leu Ala Gly Ile Gly Gly Tyr Thr Leu Ser Gln Val Ile Ser
          180          185          190
Thr Gly Ile Asn Arg Ala Val Met Ala Thr Asp Cys Gly Ser Gly Met
          195          200          205

```

Val Ser Ile Leu Gln Ala Asn Thr Lys Ser Lys Asn Pro Val Val Asp
 210 215 220
 Gly Leu Val Thr Leu Val Pro Pro Val Ile Val Met Val Val Cys Ser
 225 230 235 240
 Ile Thr Met Leu Val Leu Ile Val Ser Gly Ala Tyr Ser Ser Gly Ala
 245 250 255
 Gln Gly Thr Leu Met Val Met Ser Ala Phe Lys Asn Ser Leu Gly Ser
 260 265 270
 Leu Gly Ser Val Ile Val Ile Leu Ala Met Ala Leu Phe Gly Tyr Thr
 275 280 285
 Thr Ile Leu Thr Trp Phe Ala Cys Ala Glu Lys Ser Leu Gln Tyr Met
 290 295 300
 Ile Pro Gly Arg Arg Ala Asn Leu Trp Leu Lys Ala Ile Tyr Val Leu
 305 310 315 320
 Ile Ile Pro Leu Gly Gly Val Ile Asp Met Arg Met Ile Trp Ala Leu
 325 330 335
 Ser Asp Thr Gly Phe Ser Gly Met Val Ile Leu Asn Cys Ile Ala Leu
 340 345 350
 Ile Ala Leu Leu Lys Asp Val Leu Ser Thr Asn Arg Asp Val Ala Leu
 355 360 365
 Leu Lys Glu Arg Glu Cys Ser Val Ala Asp Pro Val Arg Asn Leu Asp
 370 375 380

Ala

385

<210>943

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>943

Arg Arg Arg Ile Met Gln Leu Leu Ser Pro Ala Phe Ala Tyr Gly Ala
 1 5 10 15
 Pro Ile Pro Lys Lys Tyr Thr Cys Gln Gly Ala Gly Ile Ser Pro Pro
 20 25 30
 Leu Thr Phe Val Asp Val Pro Gly Ala Ala Gln Ser Leu Ala Leu Ile
 35 40 45
 Val Glu Asp Pro Asp Val Pro Lys Glu Ile Arg Ser Asp Gly Leu Trp
 50 55 60
 Ile His Trp Ile Val Tyr Asn Leu Ser Thr Thr Ile Thr Asn Leu Ala
 65 70 75 80
 Glu Gly Ala Glu Ile Phe Ala Val Gln Gly Leu Asn Thr Ser Gly Lys
 85 90 95
 Pro Val Tyr Glu Gly Pro Cys Pro Pro Asp Lys Gln His Arg
 100 105 110

<210>944

<211>223

<212>PRT

<213>Chlamydia pneumoniae

<400>944

Gly Cys Met Ser Thr Val Thr Thr Glu Pro Cys Ser Ser Ile His Ile
 1 5 10 15
 Ser Leu Asn Asn Asp Trp Arg Asp Ser Gln Pro Tyr Ser Leu Asp Arg
 20 25 30
 Ala Ser Glu Leu Leu His Phe Arg Phe Leu Pro Ser Leu Val Phe Ser
 35 40 45
 Asn Trp Lys Val Glu Gln Gln Ile Glu Thr Leu Cys His Lys Ser Glu
 50 55 60
 Lys Arg Arg Leu Ile Ser Pro Leu Ala Lys Trp Leu Gly Lys Leu His
 65 70 75 80
 Lys Gln Asp Leu Leu Cys Pro Pro Ala Pro Pro Val Ser Val Cys Trp
 85 90 95
 Ile Asn Ala His Val Gly Tyr Gly Val Phe Ala Arg Asp Glu Ile Ala
 100 105 110
 Pro Trp Thr Tyr Ile Gly Glu Tyr Thr Gly Ile Leu Arg His Arg Gln
 115 120 125

Ala Ile Trp Met Asp Glu Asn Asp Tyr Cys Phe Arg Tyr Pro Met Pro
 130 135 140
 Leu Phe Thr Leu Arg Tyr Phe Thr Ile Asp Ser Gly Lys Gln Gly Asn
 145 150 155 160
 Val Thr Arg Phe Ile Asn His Ser Glu Gln Pro Asn Ala Glu Ala Ile
 165 170 175
 Gly Val Phe Ser Glu Gly Leu Phe His Val Ile Ile Arg Thr Ile Ala
 180 185 190
 Pro Ile Tyr Ala Gly Gln Glu Ile Cys Tyr His Tyr Gly Pro Leu Tyr
 195 200 205
 Trp Lys His Arg Lys Lys Arg Glu Glu Phe Ile Pro Glu Glu Glu
 210 215 220
 <210>945
 <211>265
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>945
 Met Gln Gly Phe Phe Pro Leu Ala Ser Gly Ser Lys Gly Asn Ser Ala
 1 5 10 15
 Tyr Leu Gly Thr Asp Ser Cys Lys Ile Leu Ile Asp Leu Gly Val Ser
 20 25 30
 Lys Gln Val Val Thr Arg Glu Leu Ser Met Asn Ile Asp Pro Glu
 35 40 45
 Asp Ile Gln Ala Ile Phe Val Thr His Glu His Ser Asp His Ile Ser
 50 55 60
 Gly Ile Lys Ser Phe Val Lys Ala Tyr Asn Thr Pro Ile Val Cys Asn
 65 70 75 80
 Leu Glu Thr Ala Arg Ala Leu Cys His Leu Asp Ser His Pro Glu
 85 90 95
 Phe Lys Ile Phe Ser Thr Gly Ser Ser Phe Cys Phe Gln Asp Leu Glu
 100 105 110
 Val Gln Thr Phe Asn Val Pro His Asp Ala Val Asp Pro Val Ala Phe
 115 120 125
 Ile Phe His Tyr Arg Glu Glu Lys Leu Gly Phe Cys Thr Asp Leu Gly
 130 135 140
 Trp Val Thr Ser Trp Ile Thr His Glu Leu Tyr Asp Cys Asp Tyr Leu
 145 150 155 160
 Leu Ile Glu Ser Asn His Ser Pro Glu Leu Val Arg Gln Ser Gln Arg
 165 170 175
 Pro Asp Val Tyr Lys Lys Arg Val Leu Ser Lys Leu Gly His Ile Ser
 180 185 190
 Asn Gln Glu Cys Gly Gln Leu Leu Gln Lys Ile Ile Thr Pro Lys Leu
 195 200 205
 Lys Lys Leu Tyr Leu Ala His Leu Ser Thr Glu Cys Asn Thr Ala Glu
 210 215 220
 Leu Ala Leu Ser Thr Val Ser Glu Ser Ile Ala Ser Ile Thr Ser Ile
 225 230 235 240
 Ala Pro Glu Ile Ala Leu Ala Gln Gly Ile Thr Ser Pro Ile Tyr Phe
 245 250 255
 Ser Arg Leu Glu Val Ala Cys Pro Arg
 260 265
 <210>946
 <211>553
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>946
 Asp Gly Ser Ile Ser Pro Leu Pro Gln Glu Glu Ile Pro Gly Ser Lys
 1 5 10 15
 Lys Glu Ser Phe Phe Leu Thr Pro His Pro Cys Lys Arg Phe Leu Thr
 20 25 30
 Lys Phe Val Glu Pro Gln Glu Asn Lys Ala Lys Glu Gly Lys Thr Ile
 35 40 45
 Ala Leu Ser Ser Thr Pro Thr Val Val Arg Glu Ser Lys Gly Lys Glu
 50 55 60

Arg Ala Ala Leu Pro Lys Leu Lys Ser Leu Ala Val Pro Glu Asn Asp
 65 70 75 80
 Leu Pro Gln Tyr His Leu Leu Ser Lys Asn Arg Glu Ala Arg Pro Glu
 85 90 95
 Ser Leu Gln Ala Glu Leu Glu Arg Lys Ala Leu Ile Leu Lys Gln Thr
 100 105 110
 Leu Thr Ser Phe Gly Ile Asp Ala Asp Leu Gly Asn Ile Cys Ser Gly
 115 120 125
 Pro Thr Leu Ala Ala Phe Glu Val Leu Pro His Ser Gly Val Lys Val
 130 135 140
 Gln Lys Ile Lys Ser Leu Glu Asn Asp Ile Ala Leu Lys Leu Gln Ala
 145 150 155 160
 Ser Ser Ile Arg Ile Ile Ala Pro Ile Pro Gly Lys Ala Ala Val Gly
 165 170 175
 Ile Glu Ile Pro Thr Pro Phe Pro Gln Ala Val Asn Phe Arg Asp Leu
 180 185 190
 Leu Glu Asp Tyr Gln Lys Thr Asn Arg Lys Leu Gln Ile Pro Leu Leu
 195 200 205
 Leu Gly Lys Lys Ala Asn Gly Asp Asn Leu Trp Ala Asp Leu Ala Thr
 210 215 220
 Met Pro His Leu Ile Ile Ala Gly Thr Thr Gly Ser Gly Lys Ser Val
 225 230 235 240
 Cys Ile Asn Thr Ile Val Met Ser Met Ile Met Thr Thr Leu Pro Ser
 245 250 255
 Glu Ile Lys Leu Val Ile Ile Asp Pro Lys Lys Val Glu Leu Thr Gly
 260 265 270
 Tyr Ser Gln Leu Pro His Met Leu Ser Pro Val Ile Thr Glu Ser Arg
 275 280 285
 Glu Val Tyr Asn Ala Leu Val Trp Leu Val Lys Glu Met Glu Ser Arg
 290 295 300
 Tyr Glu Ile Leu Arg Tyr Leu Gly Leu Arg Asn Ile Gln Ala Phe Asn
 305 310 315 320
 Ser Arg Thr Arg Asn Lys Thr Ile Glu Ala Ser Tyr Asp Arg Glu Ile
 325 330 335
 Arg Glu Thr Met Pro Phe Met Val Gly Ile Ile Asp Glu Leu Ser Asp
 340 345 350
 Leu Leu Leu Ser Ser Ser Gln Asp Ile Glu Thr Pro Ile Ile Arg Leu
 355 360 365
 Ala Gln Met Ala Arg Ala Val Gly Ile His Leu Ile Leu Ala Thr Gln
 370 375 380
 Arg Pro Ser Arg Glu Val Ile Thr Gly Leu Ile Lys Ala Asn Phe Pro
 385 390 395 400
 Ser Arg Ile Ser Phe Lys Val Ser Asn Lys Val Asn Ser Gln Ile Ile
 405 410 415
 Ile Asp Glu Pro Gly Ala Glu Asn Leu Met Gly Asn Gly Asp Met Leu
 420 425 430
 Val Leu Leu Pro Ser Val Phe Gly Thr Ile Arg Ala Gln Gly Ala Tyr
 435 440 445
 Ile Cys Asp Glu Asp Ile Asn Lys Val Ile Gln Asp Leu Cys Ser Arg
 450 455 460
 Phe Pro Thr Gln Tyr Val Ile Pro Ser Phe His Ala Phe Asp Asp Ser
 465 470 475 480
 Asp Ser Asp Asn Ser Gly Glu Lys Asp Pro Leu Phe Ala Gln Ala Lys
 485 490 495
 Thr Leu Ile Leu Gln Thr Gly Asn Ala Ser Thr Thr Phe Leu Gln Arg
 500 505 510
 Lys Leu Lys Ile Gly Tyr Ala Arg Ala Ala Ser Leu Ile Asp Gln Leu
 515 520 525
 Glu Glu Ala Arg Ile Ile Gly Pro Ser Glu Gly Ala Lys Pro Arg Gln
 530 535 540
 Ile Leu Ile Gln Asn Pro Leu Glu Gly
 545 550
 <210>947
 <211>218

<212>PRT

<213>Chlamydia pneumoniae

<400>947

Pro Met Ile Arg Glu Arg Lys Lys Ser Arg His Pro Arg Leu Pro Thr
 1 5 10 15
 Leu Pro Leu Ala Ala Lys Ala Ser Leu Tyr Leu Phe Phe Ala Cys Phe
 20 25 30
 Ser Gly Leu Ser Leu Trp Ser Phe His Arg Asp Gln Pro Cys Thr Gln
 35 40 45
 Asn Trp Ile Gly Leu Leu Gly Trp Ser Phe Ser Ser Phe Leu Leu Tyr
 50 55 60
 Phe Phe Gly Ala Ala Ala Phe Phe Ile Pro Xaa Tyr Phe Leu Trp Leu
 65 70 75 80
 Ser Phe Leu Tyr Phe Arg Arg Thr Pro Arg Pro Leu Phe Phe Tyr Lys
 85 90 95
 Ala Ala Ala Phe Leu Ser Leu Pro Phe Cys Ser Ala Ile Leu Leu Ser
 100 105 110
 Met Leu Ser Pro Val Gly Thr Leu Pro Ala Leu Leu Asp Thr Arg Leu
 115 120 125
 Pro Lys Phe Ile Leu Gly Asn Ile Pro Pro Val Ser Tyr Val Gly Gly
 130 135 140
 Ile Pro Phe Tyr Leu Phe Tyr Glu Gly Gln Ser Phe Cys Leu Lys His
 145 150 155 160
 Leu Ile Gly Ser Val Gly Thr Ala Leu Ile Phe Gly Phe Val Met Leu
 165 170 175
 Phe Ser Val Leu Tyr Leu Cys Gly Arg His Cys Phe Ile Lys Lys Lys
 180 185 190
 Xaa Leu Ser Arg Arg Gly Gln Lys Gly Phe Leu Leu Phe Phe Pro Asn
 195 200 205
 Leu Phe Gln Lys Phe Lys Lys Ile Asn Lys
 210 215

<210>948

<211>162

<212>PRT

<213>Chlamydia pneumoniae

<400>948

Lys Thr Ser Asn Asn Thr Gln Lys Asn Leu Leu Leu Ile Lys Ser Ala
 1 5 10 15
 Glu Ser Ser Ser Leu Gln Leu Ser Leu Ala Ser Ser Ala Ile Ser Ser
 20 25 30
 Arg Val Glu Gln Leu Ser Ser Leu Val Leu Gly Met Glu Asn Ser Asp
 35 40 45
 Phe Ser Ser Leu Arg Asp Val Pro Ile Phe Ser Ala Ile Tyr Glu Ser
 50 55 60
 Ser Thr His Thr Pro Val Pro Thr Pro Leu Val Gly Val Gly Tyr Ile
 65 70 75 80
 Asn Gly Ser Gln Ser Gly Tyr Tyr Asp Thr Gln Arg Glu Ser Leu His
 85 90 95
 Leu Ser Gln Leu Leu Gly Ser Arg Arg Val Glu Val Val Tyr Asn Gln
 100 105 110
 Gly Asn Phe Met Glu Ala Ser Leu Leu Asn Leu Cys Pro Arg Arg Pro
 115 120 125
 Arg Arg Asp Pro Ser Pro Ile Ser Leu Ala Leu Leu Glu Leu Trp Glu
 130 135 140
 Ala Phe Phe Leu Glu His Pro Pro Gly Ser Thr Phe Asn Pro Ile Phe
 145 150 155 160
 Phe Trp

<210>949

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>949

Thr Arg Ser Lys Lys Ser Gln Ser Cys Leu Lys Ser Met Ala Gly Phe

1	5	10	15
Arg Leu Gln Ser Leu Gln Ile Leu Tyr Arg Arg Ile Gly Ser Leu Tyr			
20	25	30	
Leu Gln Lys His Asp Asn Lys Arg Ser Glu Asp Val Leu Asp Ile Glu			
35	40	45	
Lys Asp Arg Tyr Gln Arg Ala Leu Tyr Ser Val His Ala Glu Leu Gly			
50	55	60	
Gly Glu Leu Arg Glu His Arg Lys Leu Arg Tyr Gln Lys Asn Ile Gly			
65	70	75	80
Leu Lys Val Leu Pro Gly Gly Cys Ser Lys Lys Asn Ala Ser Gln Ser			
85	90	95	
Ser Asn Arg Ala Lys Glu Ile Gly Glu Gly Ser Leu Arg Gly Leu Leu			
100	105	110	
Gly His Arg Phe Ser Lys Glu Ala Ser Met Lys Phe Pro Trp Leu			
115	120	125	

<210>950
 <211>412
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>950

Asn Thr Pro Gln Val Ala Leu Leu Ile Gln Tyr Phe Phe Gly Asn Gly			
1	5	10	15
Ala Phe Tyr Val Arg Glu Ala Leu Arg Leu Thr Pro His Ala Gln Asn			
20	25	30	
Ile Val Leu Val Gly Ile Cys Pro Ser Leu Tyr Pro Glu His Pro Arg			
35	40	45	
Ser Phe Tyr Tyr Arg Val Ser Gly Asp Ile Gly Ser Arg Phe Asp Asp			
50	55	60	
Arg Gly Phe Val Asn Ser Gly Val Glu Thr Leu Pro Tyr Ser Ser Gly			
65	70	75	80
Ser Phe Gly Ile Phe Trp Ile Ser Phe Thr Asp Pro Thr Phe Asn Phe			
85	90	95	
Ala Ile Val Asn Thr Phe Met Arg Thr Ala Gly Ile Asn Glu Val Ser			
100	105	110	
Arg Pro Met Thr Gln Asp Thr Glu Thr Ser Leu Ile Glu Met Arg Asp			
115	120	125	
Leu Ser Glu Gln Gln Glu Ala Asn Asn Thr Asp Ser Leu Glu Gln Glu			
130	135	140	
Glu Ser Leu Met Gly Ile Val Gly His Thr Val Gly Gly Val Ser Met			
145	150	155	160
Thr Val Thr Ser Ser Pro Asn Ile Phe Tyr Arg Ile Gln Thr Leu Leu			
165	170	175	
Gly Leu Pro Glu Thr Leu Ala Glu Ala Glu Glu Asn Pro Thr Phe Pro			
180	185	190	
Asn Ser Thr Ile Asp Ser Leu Ala Glu Ile Met Met Asn Leu Val Arg			
195	200	205	
Ile Ser Asp Ala Val Ser Ile Phe Trp Ile Phe Pro Ile Val Asp Thr			
210	215	220	
Thr Tyr Asn Gly Val Leu Leu Ala Val Cys Ile Gly Phe Phe Gly Ile			
225	230	235	240
Asn Gly Ile Cys Ser Thr Phe Leu Met Leu Thr Asn Pro Arg Ser Arg			
245	250	255	
Arg Asp Arg Trp Arg Asn Leu Arg Ile Met Val Leu Cys Tyr Arg Ser			
260	265	270	
Leu Gly Ser Gly Met Asn Leu Phe Asp Leu Ser Asn Asn Val Arg Met			
275	280	285	
Ala Ala Arg Arg His Val Thr Ser Cys Thr Val Ala Leu Tyr Ala Met			
290	295	300	
Val Thr Leu Phe Gly Trp Thr Val Ala Ile Gln Asp Ala Leu Gln Tyr			
305	310	315	320
Gly Phe Pro Ser Val Arg Asp Ala Phe Tyr Arg Tyr Cys Leu Arg His			
325	330	335	
Arg Tyr Cys Leu Thr Gln Arg Asn Glu Asp Ser Leu Gln Thr Thr Gly			
340	345	350	

Thr Arg Phe Gln Val Thr Arg Thr His Leu Glu Asp Gln Gln Met Val
 355 360 365
 Ala Ser Ile Leu Asn Leu Ser Val Phe Gly Leu Phe Phe Gly Phe Val
 370 375 380
 Gly Leu Met Thr Thr Phe Gly Gly Leu Glu Ile Ser Pro Ser Cys Arg
 385 390 395 400
 Trp Asp Ala Ala Asn Asn Arg Thr Val Gly Ile Phe
 405 410

<210>951

<211>117

<212>PRT

<213>Chlamydia pneumoniae

<400>951

Lys Ile Phe Gly Leu Glu Val Thr Val Met Glu Thr Pro Pro Thr Val
 1 5 10 15
 Cys Pro Thr Ile Pro Ile Lys Leu Ser Ser Cys Ser Lys Glu Ser Val
 20 25 30
 Leu Phe Ala Ser Cys Cys Ser Leu Arg Ser Leu Ile Ser Ile Asn Glu
 35 40 45
 Val Ser Val Ser Cys Val Met Gly Leu Glu Thr Ser Leu Ile Pro Ala
 50 55 60
 Val Arg Ile Lys Val Phe Thr Ile Ala Lys Leu Asn Val Gly Ser Val
 65 70 75 80
 Asn Glu Ile Gln Lys Ile Pro Lys Leu Pro Glu Glu Tyr Gly Arg Val
 85 90 95
 Ser Thr Pro Glu Phe Thr Asn Pro Leu Ser Ser Asn Arg Glu Pro Ile
 100 105 110
 Ser Pro Glu Thr Arg
 115

<210>952

<211>431

<212>PRT

<213>Chlamydia pneumoniae

<400>952

Met Thr Trp Leu Ser Gly Leu Tyr Phe Ile Cys Ile Ala Ser Leu Ile
 1 5 10 15
 Phe Cys Ala Ile Gly Val Ile Leu Ala Gly Val Ile Leu Leu Ser Arg
 20 25 30
 Lys Leu Phe Ile Lys Val His Pro Cys Lys Leu Lys Ile Asn Asp Asn
 35 40 45
 Glu Glu Leu Thr Lys Thr Val Glu Ser Gly Gln Thr Leu Leu Val Ser
 50 55 60
 Leu Leu Ser Ser Gly Ile Pro Ile Pro Ser Pro Cys Gly Gly Lys Ala
 65 70 75 80
 Thr Cys Lys Gln Cys Lys Val Arg Val Val Lys Asn Ala Asp Glu Pro
 85 90 95
 Leu Glu Thr Asp Arg Ser Thr Phe Ser Lys Arg Gln Leu Glu Glu Gly
 100 105 110
 Trp Arg Leu Ser Cys Gln Cys Lys Val Gln His Asp Met Ser Leu Glu
 115 120 125
 Ile Glu Glu Arg Tyr Leu Asn Ala Ser Ser Trp Glu Gly Thr Val Ile
 130 135 140
 Ser Asn Asp Asn Val Ala Thr Phe Ile Lys Glu Leu Val Val Ala Val
 145 150 155 160
 Asp Pro Asn Lys Pro Ile Pro Phe Lys Pro Gly Gly Tyr Leu Gln Ile
 165 170 175
 Thr Val Pro Ser Tyr Lys Thr Asn Ser Ser Asp Trp Lys Gln Thr Met
 180 185 190
 Ala Pro Glu Tyr Tyr Ser Asp Trp Glu His Phe His Leu Phe Asp Gln
 195 200 205
 Val Ile Asp Asn Ser Gln Leu Pro Ala Asp Ser Ala Asn Lys Ala Tyr
 210 215 220
 Ser Leu Ala Ser Tyr Pro Ala Glu Leu Pro Thr Ile Lys Phe Asn Ile
 225 230 235 240

Arg Ile Ala Thr Pro Pro Phe Ile Asn Gly Lys Pro Asn Ser Glu Ile
 245 250 255
 Pro Trp Gly Val Cys Ser Ser Tyr Val Phe Ser Leu Lys Pro Gly Asp
 260 265 270
 Lys Ile Thr Val Ser Gly Pro Tyr Gly Glu Ser Phe Met Lys Asp Asp
 275 280 285
 Asp Arg Pro Leu Ile Phe Leu Ile Gly Gly Ala Gly Ser Ser Phe Gly
 290 295 300
 Arg Ser His Ile Leu Asp Leu Leu Leu Asn Lys His Ser Lys Arg Glu
 305 310 315 320
 Ile Asp Leu Trp Tyr Gly Ala Arg Ser Leu Lys Glu Asn Ile Tyr Gln
 325 330 335
 Glu Glu Tyr Glu Asn Leu Glu Arg Gln Phe Pro Asn Phe His Tyr His
 340 345 350
 Leu Val Leu Ser Glu Pro Leu Pro Glu Asp Ile Ala Ala Gly Trp Asp
 355 360 365
 Lys Asp Asp Pro Thr Lys Thr Asn Phe Leu Phe Arg Ala Phe Asn Leu
 370 375 380
 Gly Gln Leu Ser Arg Leu Asp Asn Pro Glu Asp Tyr Leu Tyr Tyr Val
 385 390 395 400
 Cys Gly Pro Pro Leu His Asn Ser Ser Ile Leu Lys Leu Leu Gly Asp
 405 410 415
 Tyr Gly Val Glu Arg Ser Ser Ile Ile Leu Asp Asp Phe Gly Ser
 420 425 430

<210>953

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>953

Leu Leu Ser Ser Leu Pro Leu Phe Ala Glu Glu Glu Ala Ala Gln Ser
 1 5 10 15
 Lys Asn Thr Phe Val Gln Pro Ala Val Met Leu Ala Ile Ala Ile Leu
 20 25 30
 Phe Phe Tyr Phe Ile Leu Trp Arg Pro Glu Gln Lys Arg Arg Lys Ala
 35 40 45
 Met Glu Lys Arg Lys Asn Asp Leu Ala Lys Gly Asp Lys Val Thr Ala
 50 55 60
 Met Gly Ile Ile Gly Thr Val Asp Asp Ile Arg Glu His Thr Val Ile
 65 70 75 80
 Leu Asn Ile Ala Ser Gly Lys Val Glu Val Leu Lys Gly Ala Ile Ser
 85 90 95
 Glu Ile Leu Lys Pro Asn Asp Asn Lys Ser
 100 105

<210>954

<211>401

<212>PRT

<213>Chlamydia pneumoniae

<400>954

Met Ser Thr Met Gln Asn Cys Pro His Phe Gly Val Cys Gly Gly Cys
 1 5 10 15
 Ser Phe Pro Gln Ser Asn Tyr Ser Asp Ser Leu Lys Lys Lys Glu Glu
 20 25 30
 Leu Leu His Gln Leu Phe Ala Pro Leu Val Pro Ser Asp Met Ile Ala
 35 40 45
 Pro Ile Ile Pro Cys Ser Pro Ser Leu Arg Gly Arg Asn Lys Met Glu
 50 55 60
 Phe Ser Phe Phe Gln Thr Tyr Glu Gly Glu Lys Ser Leu Gly Phe Ile
 65 70 75 80
 Ser Ser Thr Lys Pro Lys Lys Gly Ile Pro Val Thr Thr Cys Leu Leu
 85 90 95
 Ile His Glu Gln Thr Met Asp Ile Leu Lys Leu Thr Arg Glu Trp Trp
 100 105 110
 Asp Lys His Pro Glu Leu Met Ala Tyr Phe Pro Pro Lys Asn Lys Gly
 115 120 125

Ser Leu Cys Thr Leu Thr Val Arg Thr Gly Ser Pro Gln Gln Asn Phe
 130 135 140
 Met Val Ile Leu Thr Thr Ser Gly Thr Pro Glu Tyr Arg Val Asn Glu
 145 150 155 160
 Ala Cys Ile Asp Glu Trp Lys Glu Ile Leu Leu Ser Ser Ser Leu Asn
 165 170 175
 Ile Ala Ser Ile Tyr Trp Glu Glu Lys Val Ala Ala Arg Gly Ile Ser
 180 185 190
 Thr Tyr Tyr Glu Thr Lys Leu Leu Tyr Gly Ala Pro Ser Ile Gln Gln
 195 200 205
 Lys Leu Ser Leu Pro Ser Asp Gly Asn Ser Ala Ser Phe Ser Leu Arg
 210 215 220
 Pro Arg Ser Phe Phe Gln Pro Gln Ile Thr Gln Ala Ala Lys Ile Ile
 225 230 235 240
 Glu Thr Ala Lys Glu Phe Ile Asn Pro Glu Gly Ser Glu Thr Leu Leu
 245 250 255
 Asp Leu Tyr Cys Gly Ala Gly Thr Ile Gly Ile Met Leu Ser Pro Tyr
 260 265 270
 Val Lys Asn Val Ile Gly Val Glu Ile Ile Pro Asp Ala Val Ala Ser
 275 280 285
 Ala Gln Glu Asn Ile Lys Ala Asn Asn Lys Glu Asp Cys Val Glu Val
 290 295 300
 Tyr Leu Glu Asp Ala Lys Ala Phe Cys Lys Arg Asn Glu Asn Cys Lys
 305 310 315 320
 Ala Pro Asp Val Ile Ile Ile Asp Pro Pro Arg Cys Gly Met Gln Ser
 325 330 335
 Lys Val Leu Lys Tyr Ile Leu Arg Ile Gly Ser Pro Lys Ile Val Tyr
 340 345 350
 Ile Ser Cys Asn Pro Lys Thr Gln Phe Gln Glu Cys Ala Asp Leu Ile
 355 360 365
 Ser Gly Gly Tyr Arg Ile Lys Lys Met Gln Pro Ile Asp Gln Phe Pro
 370 375 380
 Tyr Ser Thr His Leu Glu Asn Ile Ile Leu Leu Glu Arg Glu Ile Asp
 385 390 395 400
 Leu

<210>955

<211>123

<212>PRT

<213>Chlamydia pneumoniae

<400>955

Met Ala Leu Lys Asp Thr Ala Lys Lys Met Lys Asp Leu Leu Asp Ser
 1 5 10 15
 Ile Gln His Asp Leu Ala Lys Ala Glu Lys Gly Asn Lys Ala Ala Ala
 20 25 30
 Gln Arg Val Arg Thr Asp Ser Ile Lys Leu Glu Lys Val Ala Lys Leu
 35 40 45
 Tyr Arg Lys Glu Ser Ile Lys Ala Glu Lys Ser Gly Leu Leu Lys Arg
 50 55 60
 Lys Pro Ser Thr Lys Ala Pro Ala Lys Val Lys Lys Thr Ala Glu Lys
 65 70 75 80
 Lys Ala Pro Lys Lys Ser Ser Ala Ala Ala Lys Thr Ser Lys Ala
 85 90 95
 Val Lys Ala Ser Lys Pro Ala Ser Lys Lys Thr Ala Ala Lys Lys Val
 100 105 110
 Lys Lys Pro Ser Lys Ala Arg Gly Phe Arg Lys
 115 120

<210>956

<211>822

<212>PRT

<213>Chlamydia pneumoniae

<400>956

Met Lys Lys Leu Tyr His Pro Thr Leu Phe Leu Arg Pro Leu Ile Arg
 1 5 10 15

Leu Ser Leu Ile Phe Ala Leu Ser Leu Thr Leu Ile Ser Gly Asn Phe
 20 25 30
 Pro Gln Gln Lys Ser Phe Gly His Cys Cys Ala Asp Met His Ser Ala
 35 40 45
 Leu Ile Ser Gly Lys Asn Cys Glu Glu Leu Phe Ala Asp Phe Ile Glu
 50 55 60
 Arg Val Leu Ala Asp Arg Glu Thr Leu Thr Ala Arg Asp Trp Gly Thr
 65 70 75 80
 Val Val Val Leu Val Arg Glu Tyr Leu Leu Lys Cys Ile Arg Lys Gly
 85 90 95
 Asp Cys Asp Tyr Gly Val Lys Ile Leu Gln Lys Leu Leu Ala Leu Arg
 100 105 110
 Leu Pro Lys Asp Ala Arg Lys Asp Leu Gln Ile Leu Trp His Arg Leu
 115 120 125
 Asn Pro Glu Gln Ala Pro Leu Arg Asp Val Val Asp Gln Leu Phe Thr
 130 135 140
 Ile Gly Cys His Glu Ser Leu Gln Asp His Leu Leu Phe Glu Leu Tyr
 145 150 155 160
 Thr Val Thr Leu His Ser Gly Tyr Glu Asn Arg Lys Gln Asp Met Leu
 165 170 175
 Leu Ala Lys Glu Gln Gly Asp Tyr Lys Lys Ala Ile Glu Leu Ala Lys
 180 185 190
 Glu Leu Val Ala Ala Leu Glu Lys Gly Ser Cys Ser Pro His Pro Glu
 195 200 205
 Ile Val Gln Ile Glu Lys Thr Phe Leu Gln Lys Thr Leu Leu Ala Leu
 210 215 220
 Gln Ile Lys Val Ala Gln Glu Ala Gln Glu Ser Cys Asp Ala Leu Leu
 225 230 235 240
 Thr Pro Tyr Cys Leu Ser Glu Ile Ala Tyr Thr Glu Ala Met Asp Ala
 245 250 255
 Leu Val Leu Arg Ile Ala Arg Gly Glu Val Ser Arg Thr Asn Glu Val
 260 265 270
 Asp Ser Val Leu Leu Ser His Ala Leu Gln His Leu Pro Phe Ala Arg
 275 280 285
 Glu Lys Ala Ile Pro Glu Leu Glu Val Leu Ile Asp His Gly Ala Tyr
 290 295 300
 Leu Glu Ser Thr Leu Leu Tyr Tyr Ala Tyr Phe Ser Leu Leu Glu Leu
 305 310 315 320
 Tyr His Gln Asn Lys Asp Phe Ala Ser Leu Glu Arg Leu Leu Glu Lys
 325 330 335
 Gly Asp Ala Val Phe Val Pro Glu His Pro Tyr Phe Pro Glu Tyr Gly
 340 345 350
 Phe Phe Leu Gly Ala Tyr Phe Tyr Ala Lys Gly Lys Tyr Glu Ser Ala
 355 360 365
 Glu Lys Val Phe Leu Gln Ile Asp Pro Ala Val Lys Leu Gly Ala
 370 375 380
 Thr Phe Ala Arg Ala Tyr Glu Tyr Leu Gly Cys Ile Ala Tyr Val Gln
 385 390 395 400
 Asn His Tyr Glu Lys Ala Glu Glu Tyr Phe Leu Arg Ala Tyr Lys Ser
 405 410 415
 Trp Gly Arg Glu Glu Ser Gly Ile Gly Leu Phe Leu Ala Tyr Ala Val
 420 425 430
 Gln Lys Lys Lys Thr Ala Cys Glu Asp Met Leu Tyr His Pro Lys Phe
 435 440 445
 Ser Phe Thr Tyr Arg His Leu Leu Asp Ser Leu Cys Ser Leu Ser Tyr
 450 455 460
 Pro His Gly Glu Asn Lys Gly Ser Ser Ala Ile Gln Arg Val His Arg
 465 470 475 480
 Ala Val Pro Glu Leu Ser Glu Ile Tyr Ser Arg Cys Ile Tyr Asp Met
 485 490 495
 Ile Lys Tyr Arg Asn Val Thr Tyr Thr His Pro Ile Ile Glu Leu Ala
 500 505 510
 Tyr Asn Gln Val Arg Asn Leu Glu Lys Arg Asn Leu Glu Glu Ile Cys
 515 520 525

Arg Asp Ala Gln Asp Pro Glu Tyr Asp Lys Ala Leu Ala Phe Trp Gly
 530 535 540
 Ala Leu Gln Ser Gly Ala Ser Val Pro Arg Ser Leu Ile Glu Ser Ser
 545 550 555 560
 Asp Val Asp Glu Ala Gly Ile Thr Ile Arg Cys Tyr Glu Ala Leu Tyr
 565 570 575
 Phe His Asn Pro Asp Ala Ile Ala Met Leu Pro Gln Ala Phe Ser Glu
 580 585 590
 Glu Cys Asn Ser Trp Gln Thr Ala Leu Arg Leu Val Trp Thr Leu Val
 595 600 605
 Arg Pro Lys Gly Ala Pro Asn His Ala Lys Tyr Trp Asp His Leu Val
 610 615 620
 Leu Arg Pro His Gly Asp Ser Leu Tyr Phe Phe Gly Tyr Asp Leu Gln
 625 630 635 640
 Glu Tyr Leu Ile Gly Lys Glu Asp Ala Leu Lys His Leu Ser Val Phe
 645 650 655
 Ala Glu Leu Phe Pro Lys Ser Ser Leu Ser Leu Val Tyr Tyr Leu
 660 665 670
 Gln Gly Tyr Ser Glu Ser Ser Ala Leu Arg Lys Val Gly Trp Phe Val
 675 680 685
 Lys Ala Leu Glu Glu Phe Thr Glu Ile Ser Trp Ser Gly Glu His Met
 690 695 700
 Lys Thr Trp Ala Tyr Ile Tyr Tyr Met Val Lys Leu Asp Leu Ala Asp
 705 710 715 720
 Thr Tyr Ile Ser Leu Gly Asn Phe Ser Gln Ala Val His Ile Leu Glu
 725 730 735
 Glu Val Lys Glu Asp Trp Gln Val Ala Ser His Pro Lys Leu His Phe
 740 745 750
 Leu Lys Gly Glu Asp Cys Tyr Leu Ala Met Glu Leu Arg Trp Val Glu
 755 760 765
 Gly Leu Ala Tyr Ala Tyr Phe Gln Leu His Glu Thr Ala His Leu Ser
 770 775 780
 Asn His Leu Leu Glu His Val Glu Lys Asn Leu Ile Ser Pro Arg Ser
 785 790 795 800
 Tyr Arg Asp Tyr Tyr Gly Glu Ser Leu Gln Arg Thr Leu Gly Leu Cys
 805 810 815
 Gln Arg Phe Leu Gly Val
 820

<210>957

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>957

His Gln Leu Arg Leu Ala Ser Arg Gln Leu Phe Ala Ser Gln Arg Leu
 1 5 10 15
 Trp His Ala Ile Cys Arg Arg Ala Ser Pro Leu Gly Asn Arg Leu Glu
 20 25 30
 Phe Ser Asn Leu Pro Ala Ser Thr Pro Gly Lys Thr Val Leu Ser Leu
 35 40 45
 Leu Ile Glu Gly Lys Trp Arg Glu Ser Glu Ala His Ala Phe Ala Ile
 50 55 60
 Ala Ala Leu Ser Glu Tyr Leu Asn Ile Asn Gln Lys Pro Asp Ala Phe
 65 70 75 80
 Ala Leu Phe Ser Ser Gln Asp Gly Met Pro Gln His Ala Val Gly Phe
 85 90 95
 Leu Glu Arg Lys Glu Arg Ile Leu Pro His Leu Pro Gly Asn Leu Lys
 100 105 110
 Ile Val Gly Gln Asn Ile Ala Gly Pro Gly Leu Asn Arg Cys Ile Ala
 115 120 125
 Ser Ala Tyr His Ala Ile Cys Asp Leu His Thr Glu Glu Thr Leu Ala
 130 135 140
 Gln Pro Gln Ser Ser Leu
 145 150
 <210>958

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>958

Ala Glu Arg Arg Phe Cys Val Lys Arg Ala Ile Ile Ile Gly Ala Gly
 1 5 10 15
 Ile Ser Gly Leu Ala Ala Gly Trp Trp Leu His Lys Lys Phe Pro Gln
 20 25 30
 Ala Glu Ile Leu Val Leu Asp Lys Glu Ala Tyr Ala Gly Gly Phe Val
 35 40 45
 Arg Thr Glu Ser Pro Gln Gly Phe Ser Phe Asp Leu Gly Pro Lys Gly
 50 55 60
 Phe Leu Thr Arg Gly Asp Gly Glu Tyr Thr Leu Lys Leu Ile His Glu
 65 70 75 80
 Leu Gly Leu Gln Asn Ser Leu Ile Phe Ser Asp Arg Ala Ala Lys Asn
 85 90 95
 Arg Phe Val Tyr Tyr Arg Gly Lys Ala Arg Lys Ile Ser Thr Trp Thr
 100 105 110
 Leu Leu Arg Lys Gly Leu Leu Pro Ser Leu Ile Lys Asp Phe Arg Ala
 115 120 125
 Pro Cys Tyr Thr Gln Asp Ser Ser Val Gln Asp Phe Leu Lys Arg His
 130 135 140
 Ser Ser Gln Asn Phe Thr Ser Tyr Ile Leu Asp Pro Leu Ile Thr Ala
 145 150 155 160
 Ile Arg Ala Gly His Ser Ser Ile Leu Ser Thr His Met Ala Phe Pro
 165 170 175
 Glu Leu Ala Lys Arg Glu Ala Ser Ser Gly Ser Leu Leu Arg Ser Tyr
 180 185 190
 Leu Lys Asn Arg Ser Pro Lys Lys Ser Lys Thr Asp Arg Tyr Leu Ala
 195 200 205
 Ser Leu Ser Pro Ser Met Gly Thr Leu Ile Thr Thr Ile Gln Glu Lys
 210 215 220
 Leu Pro Ala Thr Trp Lys Phe Ser Thr Ser Val Thr His Ile Asp Cys
 225 230 235 240
 Ser Pro Lys Glu Ala Cys Val Thr Thr Pro Ser Glu Thr Phe Phe Ala
 245 250 255
 Asp Met Val Ile Tyr Thr Gly Pro Leu Gln Gln Leu Pro Val Leu Leu
 260 265 270
 Pro Asn Tyr Gly Ile Glu Asn Leu Ser Lys Arg Val Leu Pro Trp Asn
 275 280 285
 Leu Ser Ser Ile Ser Leu Gly Trp His His Ala Asn Phe Ser Leu Pro
 290 295 300
 Lys Gly Tyr Gly Met Leu Phe Ala Asp Glu Leu Pro Leu Leu Gly Ile
 305 310 315 320
 Val Trp Asn Ser Gln Ile Phe Pro Gln Val Arg Gln Gly Lys Gln Cys
 325 330 335
 Ser Pro Phe Ser Leu Lys Ala Asn Gly Gly Asn Gln Lys Leu Met Pro
 340 345 350
 Leu Arg

<210>959

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>959

Phe Leu Met Phe Asn Val Asn Phe Lys Phe Leu Glu Gly Leu His Gln
 1 5 10 15
 Pro Ala Pro Arg Tyr Thr Ser Tyr Pro Thr Ala Leu Glu Trp Glu Pro
 20 25 30
 Ser Asp Ala Ala Pro Ala Leu Leu Ala Phe Gln Arg Xaa Arg Xaa Asn
 35 40 45
 Xaa Gln Pro Leu Ser Leu Tyr Phe His Ile Pro Phe Cys Gln Ser Met
 50 55 60
 Cys Leu Tyr Cys Gly Cys Ser Val Val Leu Asn Arg Arg Glu Asp Ile

65 70 75 80
 Val Glu Ala Tyr Ile Asn Thr Leu Ile Gln Glu Met Lys Leu Val Val
 85 90 95
 Glu Thr Ile Gly Phe Arg Pro Gln Val Ser Arg Ile His Phe Gly Gly
 100 105 110
 Gly Thr Pro Ser Arg Leu Ser Arg Glu Leu Phe Thr Leu Leu Phe Asp
 115 120 125
 His Ile His Lys Leu Phe Asp Leu Ser His Ala Glu Glu Ile Ala Ile
 130 135 140
 Glu Val Asp Pro Arg Ser Leu Arg Asn Asp Met Glu Lys Ala Asp Phe
 145 150 155 160
 Phe Gln Asn Val Gly Phe Asn Arg Val Ser Leu Gly Val Gln Asp Thr
 165 170 175
 Gln Ala Asp Val Gln Glu Ala Val Arg Arg Arg Gln Ser His Glu Glu
 180 185 190
 Ser Leu Lys Ala Tyr Glu Lys Phe Lys Glu Leu Ala Phe Gln Ser Ile
 195 200 205
 Asn Ile Asp Leu Ile Tyr Gly Leu Pro Lys Gln Thr Lys Glu Ser Phe
 210 215 220
 Ser Lys Thr Ile Gln Asp Ile Leu Ala Met Tyr Pro Asp Arg Leu Ala
 225 230 235 240
 Leu Phe Ser Phe Ala Ser Val Pro Trp Ile Lys Pro His Gln Lys Ala
 245 250 255
 Met Lys Ala Ser Asp Met Pro Ser Met Glu Glu Lys Phe Ala Ile Tyr
 260 265 270
 Ser Gln Ser Arg His Leu Leu Thr Lys Ala Gly Tyr Gln Ala Ile Gly
 275 280 285
 Met Asp His Phe Ser Leu Pro His Asp Pro Leu Thr Leu Ala Phe Lys
 290 295 300
 Asn Lys Thr Leu Ile Arg Asn Phe Gln Gly Tyr Ser Leu Pro Pro Glu
 305 310 315 320
 Glu Asp Leu Leu Gly Leu Gly Met Thr Ser Thr Ser Phe Ile Arg Gly
 325 330 335
 Ile Tyr Leu Gln Asn Ala Lys Thr Leu Glu Glu Tyr His Asn Thr Val
 340 345 350
 Leu Arg Gly Thr Phe Ala Thr Val Lys Ser Lys Ile Leu Thr Glu Asp
 355 360 365
 Asp Arg Ile Arg Lys Trp Ala Ile His Lys Leu Met Cys Thr Phe Thr
 370 375 380
 Ile Asn Lys Glu Glu Phe Phe Asn Leu Phe Gly Tyr Glu Phe Asp Thr
 385 390 395 400
 Tyr Phe Ile Glu Ser Arg Asp Arg Leu Ile Ser Met Glu Thr Thr Gly
 405 410 415
 Leu Ile His Asn Ser Pro Gly Ser Leu Lys Val Thr Pro Leu Gly Glu
 420 425 430
 Leu Phe Val Arg Val Ile Ala Thr Ala Phe Asp His Tyr Phe Leu Asn
 435 440 445
 Lys Val Ser Lys Lys Glu Cys Phe Ser Ala Ser Ile
 450 455 460
 <210>960
 <211>281
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>960
 Ser Tyr Cys Arg Ala Thr Leu Leu Gly Pro Ser Leu Leu His Val Asp
 1 5 10 15
 Ala Ala Ile Leu Phe Ala Asp Ile Leu Ser Ile Leu Asp Gly Phe Ala
 20 25 30
 Val Thr Tyr Asp Phe Ala Pro Gly Pro Arg Ile Gln Phe Ser Pro Glu
 35 40 45
 Gln Pro Phe Thr Phe Thr Ser Asp Pro Gln Thr Ile Phe Ser Tyr Leu
 50 55 60
 Leu Asp Ala Ile Arg Thr Leu Lys Gln Lys Leu Pro Val Pro Leu Ile
 65 70 75 80

Val Phe Ala Ala Ser Pro Phe Thr Leu Ala Cys Tyr Leu Ile Asp Gly
85 90 95
Gly Ala Ser Lys Asp Phe Ser Lys Thr Met Ser Phe Leu Tyr Val Tyr
100 105 110
Pro Glu Lys Phe Asp Gln Leu Ile Ser Thr Ile Ile Glu Gly Thr Ala
115 120 125
Ile Tyr Leu Lys Thr Gln Met Asp Ala Gly Ala Ala Val Gln Leu
130 135 140
Phe Glu Ser Ser Ser Leu Arg Leu Pro Ser Ala Leu Phe Thr Arg Tyr
145 150 155 160
Val Thr Glu Pro Asn Arg Arg Leu Ile Ala Lys Leu Lys Glu Gln Ala
165 170 175
Ile Pro Val Ser Leu Phe Cys Arg Cys Phe Glu Glu Asn Phe Tyr Thr
180 185 190
Leu Gln Ala Thr Gln Ala Asp Thr Leu His Pro Asp Tyr His Val Asp
195 200 205
Leu His Arg Ile Gln Lys Asn Leu Met Leu Ser Leu Gln Gly Asn Leu
210 215 220
Asp Pro Ala Ile Phe Leu Leu Pro Gln Glu Lys Leu Leu His Tyr Val
225 230 235 240
Glu Ala Phe Leu Val Pro Leu Arg Thr Tyr Pro Asn Phe Ile Phe Asn
245 250 255
Ser Gly His Gly Ile Leu Pro Glu Thr Pro Leu Glu Asn Val Gln Leu
260 265 270
Val Val Ser Tyr Val Gln Arg Gln Leu
275 280

<210>961

<211>1085

<212>PRT

<213>Chlamydia pneumoniae

<400>961

Met Ala Met Asp Phe Asn Pro Val Asn Leu Asp Phe Ser Ile Ser Lys
1 5 10 15
Glu Phe Lys Glu Glu Thr Leu Pro Leu Leu Leu Glu Asn Ile His Pro
20 25 30
Gly Ala Thr Ala Phe Leu Ala Ala Lys Met Phe His Asp Cys Arg Ala
35 40 45
Ser Val Ile Met Ile Thr Thr Pro Ala Arg Leu Asp Asp Leu Phe Glu
50 55 60
Asn Leu Arg Thr Phe Leu Asp Gln Ala Pro Val Glu Phe Pro Ser Ser
65 70 75 80
Glu Ile Asp Leu Ser Pro Lys Leu Val Asn Ile Asp Ala Val Gly Lys
85 90 95
Arg Asp His Leu Leu Tyr Ser Leu Asn Gln His Arg Ala Pro Ile Phe
100 105 110
Cys Val Thr Thr Leu Lys Ala Leu Leu Glu Lys Thr Arg Ser Pro Gln
115 120 125
Ala Thr Ser Gln Gln His Leu Asp Leu Ala Val Gly Asp Val Leu Asp
130 135 140
Pro Glu Ala Thr Thr Glu Leu Cys Lys Ser Leu Gly Tyr Ser Gln Val
145 150 155 160
Met Leu Thr Ser Glu Lys Gly Glu Phe Ser Cys Arg Gly Gly Ile Val
165 170 175
Asp Ile Phe Pro Leu Ser Ser Pro Glu Pro Phe Arg Ile Glu Phe Trp
180 185 190
Gly Glu Lys Ile Ile Ser Ile Arg Ser Tyr Asn Pro Ser Asp Gln Leu
195 200 205
Ser Thr Gly Lys Val Ser Lys Ile Ser Ile Ser Pro Ala Tyr Thr Glu
210 215 220
Glu Ala Ser Gly Gly Asn Tyr Ser His Ser Leu Leu Asp Tyr Phe Ser
225 230 235 240
Thr Pro Pro Leu Tyr Leu Phe Asp Asn Leu Glu Ile Leu Glu Asp Asp
245 250 255
Phe Ala Asp Ile Ser Gly Thr Leu Ser Ser Leu Pro Asp Arg Phe Phe

1001

```

      770              775              780
Leu Ala Glu Thr Ile Arg Asn Leu Ile Pro Glu Ala Arg Ile Gly Val
785              790              795              800
Ala His Gly Gln Met Gly Ala Glu Asp Leu Ser Asn Ile Phe Thr Lys
      805              810              815
Phe Lys Asn Gln Lys Thr Asp Ile Leu Val Ala Thr Ala Leu Ile Glu
      820              825              830
Asn Gly Ile Asp Ile Pro Asn Ala Asn Thr Ile Leu Ile Asp His Ala
      835              840              845
Asp Lys Phe Gly Met Ala Asp Leu Tyr Gln Met Lys Gly Arg Val Gly
      850              855              860
Arg Trp Asn Lys Lys Ala Tyr Cys Tyr Phe Leu Val Pro His Leu Asp
865              870              875              880
Arg Leu Ser Gly Pro Ala Ala Lys Arg Leu Ala Ala Leu Asn Lys Gln
      885              890              895
Glu Tyr Gly Gly Gly Met Lys Ile Ala Leu His Asp Leu Glu Ile Arg
      900              905              910
Gly Ala Gly Asn Ile Leu Gly Thr Asp Gln Ser Gly His Ile Gly Thr
      915              920              925
Ile Gly Phe Asn Leu Tyr Cys Lys Leu Leu Lys Lys Ala Val Ser Ala
      930              935              940
Leu Lys Lys His Thr Ser Pro Leu Leu Phe Asn Asp Asp Val Lys Ile
945              950              955              960
Glu Phe Pro Tyr Asn Ser Arg Ile Pro Asp Thr Tyr Ile Glu Thr Gly
      965              970              975
Ser Met Arg Ile Glu Phe Tyr Gln Lys Ile Gly Asn Ala Glu Ser Ser
      980              985              990
Glu Glu Leu Thr Ala Ile Gln Glu Glu Met Arg Asp Arg Phe Gly Pro
      995              1000              1005
Leu Pro Gln Glu Ile Cys Trp Leu Phe Ala Leu Ala Glu Ile Arg Leu
      1010              1015              1020
Phe Ala Leu Gln His Gly Ile Ser Ser Ile Lys Gly Thr Ala Asn Ala
1025              1030              1035              1040
Leu Tyr Val Gln Lys Cys Leu Ser Lys Ser Glu Gln Thr Lys Lys Thr
      1045              1050              1055
Leu Pro Tyr Ala Leu Ser Pro Thr Pro Glu Leu Leu Val Lys Glu Val
      1060              1065              1070
Ile Glu Ser Ile Glu Arg Gly Phe Leu Ile Asn Ala Ser
      1075              1080              1085
<210>962
<211>182
<212>PRT
<213>Chlamydia pneumoniae
<400>962
Gly Gly His Trp Arg Lys Ser Arg Ser Tyr Ser Thr Pro Thr Lys Arg
1      5      10      15
Ser Ile Arg Arg Asp Cys Thr Leu Leu Gln Val Pro Arg Asp Gln Ile
      20      25      30
Val Ser Arg Leu Thr Ala Thr Leu Asp Glu Arg Lys Gln Gln Asp Lys
      35      40      45
Arg Leu Asn Glu Leu Glu Asn Ser Leu Ile Gln Thr Lys Leu Asp Lys
      50      55      60
Leu Ile His Asn Cys His Gln Arg Gln Gly Ile Thr Cys Leu Val His
      65      70      75      80
His Leu Ala Glu His Glu Asn His Arg Leu Gln Gln Tyr Ala Gln Cys
      85      90      95
Leu His Gln Arg Ile Pro Glu Lys Leu Ile Ser Leu Trp Thr Thr Glu
      100      105      110
Lys Asn Gly Lys Tyr Ile Val Leu Ser Arg Val Ser Asp Asp Leu Ile
      115      120      125
Thr Gln Gly Val His Ala Gln Asp Leu Leu Lys Ala Val Leu Thr Pro
      130      135      140
Cys Gly Gly Arg Trp Gly Gly Lys Asp Gln Ser Ala Gln Gly Ser Ala
145      150      155      160

```

Pro Ala Leu Pro Ala Thr Glu Val Leu Asn Glu Thr Leu Trp Gln Trp
 165 170 175
 Ile Ser Thr Gln Leu Ile
 180

<210>963

<211>482

<212>PRT

<213>Chlamydia pneumoniae

<400>963

Ser Gly Cys Val Ala Arg Leu Ile Ala Lys Thr Glu Gln Leu Ser Gly
 1 5 10 15
 Lys Val Tyr His Pro Asp Asp Ser Gly Ala Ala Phe Arg Val Ile Ala
 20 25 30
 Asp His Val Arg Ser Leu Ser Phe Ala Ile Ala Asp Gly Leu Leu Pro
 35 40 45
 Gly Asn Thr Glu Arg Gly Tyr Val Leu Arg Lys Ile Leu Arg Arg Ser
 50 55 60
 Val Asn Tyr Gly Arg Arg Leu Gly Phe Arg Asn Pro Phe Leu Ala Glu
 65 70 75 80
 Ile Val Pro Ser Leu Ala Asp Ala Met Gly Glu Ala Tyr Pro Glu Leu
 85 90 95
 Lys Asn Ser Leu Ser Gln Ile Gln Lys Val Leu Thr Leu Glu Glu Glu
 100 105 110
 Ser Phe Phe Lys Thr Leu Asp Arg Gly Gly Asn Leu Leu Gln Gln Val
 115 120 125
 Leu Lys Ser Ser Ser Ser Ser Ser Cys Ile Ser Gly Glu Asp Ala Phe
 130 135 140
 Lys Leu Lys Asp Thr Tyr Gly Met Pro Ile Asp Glu Ile Ser Leu Leu
 145 150 155 160
 Ala Lys Asp Tyr Asp Tyr Ser Val Asp Met Asp Thr Phe His Lys Leu
 165 170 175
 Glu Gln Glu Ala Lys Glu Arg Ser Arg Lys Asn Val Val Gln Ser Gln
 180 185 190
 Gly Thr Ser Glu Ser Ile Tyr Asn Glu Leu His Leu Thr Ser Glu Phe
 195 200 205
 Ile Gly Tyr Asp His Leu Ser Cys Asp Thr Phe Ile Glu Ala Ile Ile
 210 215 220
 Ser Lys Asp His Ile Val Ser Ser Leu Gln Glu Lys Gln Glu Gly Ala
 225 230 235 240
 Ile Val Leu Lys Val Ser Pro Phe Tyr Ala Glu Lys Gly Gly Gln Val
 245 250 255
 Gly Asp Ser Gly Glu Ile Phe Cys Ser Glu Gly Thr Phe Ile Val Thr
 260 265 270
 His Thr Thr Ser Pro Lys Ala Gly Leu Ile Val His His Gly Arg Ile
 275 280 285
 Ser Gln Gly Ser Leu Thr Val Glu Ala Ala Val Thr Ala Gln Val Asn
 290 295 300
 Arg Tyr Arg Arg Lys Arg Ile Ala Asn Asn His Thr Ala Cys His Leu
 305 310 315 320
 Leu His Lys Ala Leu Glu Ile Thr Leu Gly Asp His Ile Arg Gln Ala
 325 330 335
 Gly Ser Tyr Val Asp Asp Thr Lys Ile Arg Leu Asp Phe Thr His Pro
 340 345 350
 Gln Ala Ile Ser Pro Glu Asp Leu Leu Cys Ile Glu Thr Leu Val Asn
 355 360 365
 Glu Ser Ile Arg Glu Asn Glu Pro Val Asp Ile Arg Glu Ala Leu Tyr
 370 375 380
 Ser Asp Val Met Asn Ser Ser Glu Ile Lys Gln Phe Phe Gly Asp Lys
 385 390 395 400
 Tyr Ser Asp Val Val Arg Val Val Ser Ala Gly His Ser His Glu Leu
 405 410 415
 Cys Gly Gly Thr His Ala Glu Ala Thr Gly Asp Ile Gly Phe Phe Arg
 420 425 430
 Ile Thr Lys Glu His Ala Val Ala Met Gly Ile Arg Arg Ile Glu Ala

435 440 445
 Val Thr Gly Glu Lys Ala Glu Ala Thr Val His Gln Gln Ser Glu Val
 450 455 460
 Leu Glu Glu Ile Val Arg Tyr Tyr Lys Ser Leu Gly Ile Arg Leu Ser
 465 470 475 480
 Pro Gly

<210>964

<211>129

<212>PRT

<213>Chlamydia pneumoniae

<400>964

Ser Arg Arg Ile Tyr Ala Thr Val His Glu Lys Asp Asp Glu Ala Phe
 1 5 10 15
 Ala Leu Trp Glu Ala Tyr Leu Pro Thr Asp Arg Ile Phe Arg Leu Thr
 20 25 30
 Asp Lys Asp Asn Phe Trp Ser Met Ala Asn Thr Gly Pro Cys Gly Tyr
 35 40 45
 Cys Ser Glu Leu Leu Phe Asp Arg Gly Pro Ser Phe Gly Asn Ala Ser
 50 55 60
 Ser Pro Leu Asp Asp Thr Asp Gly Glu Arg Phe Leu Glu Tyr Trp Asn
 65 70 75 80
 Leu Val Phe Met Glu Phe Asn Arg Thr Ser Glu Gly Ser Leu Leu Ala
 85 90 95
 Leu Pro Asn Lys His Val Asp Thr Gly Ala Gly Leu Glu Arg Leu Val
 100 105 110
 Ser Leu Ile Ala Gly Thr His Thr Val Phe Glu Ala Asp Val Leu Arg
 115 120 125
 Asp

<210>965

<211>195

<212>PRT

<213>Chlamydia pneumoniae

<400>965

Met Leu Ser Asn Thr Ile Arg Ser Asn Phe Leu Lys Phe Tyr Ala Asn
 1 5 10 15
 Arg His His Thr Ile Leu Pro Ser Ser Pro Val Phe Pro His Asn Asp
 20 25 30
 Pro Ser Ile Leu Phe Thr Asn Ala Gly Met Asn Gln Phe Lys Asp Ile
 35 40 45
 Phe Leu Asn Lys Glu Lys Val Ser Tyr Ser Arg Ala Thr Thr Ser Gln
 50 55 60
 Lys Cys Ile Arg Ala Gly Gly Lys His Asn Asp Leu Asp Asn Val Gly
 65 70 75 80
 His Thr Ser Arg His Leu Thr Phe Phe Glu Met Leu Gly Asn Phe Ser
 85 90 95
 Phe Gly Asp Tyr Phe Lys Ala Glu Ala Ile Ala Phe Ala Trp Glu Val
 100 105 110
 Ser Leu Ser Val Phe Asn Phe Asn Pro Glu Gly Phe Thr Leu Pro Tyr
 115 120 125
 Met Lys Lys Thr Met Lys His Leu Leu Phe Gly Lys His Ile Phe Leu
 130 135 140
 Gln Ile Val Phe Ser Val Leu Gln Thr Lys Thr Thr Ser Gly Ala Trp
 145 150 155 160
 Gln Thr Gln Ala Pro Val Ala Ile Val Pro Ser Ser Ser Leu Ile Val
 165 170 175
 Ala Pro Val Leu Glu Thr Pro Leu Leu Pro Leu Thr Ile Leu Met Glu
 180 185 190
 Ser Val Ser
 195

<210>966

<211>692

<212>PRT

<213>Chlamydia pneumoniae

<400>966

Leu Gly Ile Ser Tyr Ser Cys Cys Phe Tyr Ile Glu Gly Leu Gln Gly
 1 5 10 15
 Leu Leu Met Ile Asn Lys Glu Leu Asp Ile Gly Ile Leu Gly Lys Ile
 20 25 30
 Ala Gly Ala Ile Lys Gln Ile Ser Ile Glu Ser Ile Gln Lys Ala Ser
 35 40 45
 Ser Gly His Pro Gly Leu Pro Leu Gly Cys Ala Glu Leu Ala Ala Tyr
 50 55 60
 Leu Tyr Gly Tyr Val Leu Arg Gln Asn Pro Arg Asp Pro His Trp Ile
 65 70 75 80
 Asn Arg Asp Arg Phe Val Leu Ser Ala Gly His Gly Ser Ala Leu Leu
 85 90 95
 Tyr Ser Cys Leu His Leu Ala Gly Phe Asp Val Ser Leu Glu Asp Leu
 100 105 110
 Gln Glu Phe Arg Gln Leu His Ser Arg Thr Pro Gly His Pro Glu Tyr
 115 120 125
 Gly Glu Thr Val Gly Val Glu Ala Thr Thr Gly Pro Leu Gly Gln Gly
 130 135 140
 Leu Gly Asn Ala Val Gly Met Ala Leu Ser Met Lys Met Leu Glu Ser
 145 150 155 160
 Arg Phe Asn Arg Pro Gly His Glu Ile Phe Asn Gly Lys Ile Tyr Cys
 165 170 175
 Leu Ala Gly Asp Gly Cys Phe Met Glu Gly Val Ser His Glu Val Cys
 180 185 190
 Ser Phe Ala Gly Ser Leu Asn Leu Asn Asn Leu Val Val Ile Tyr Asp
 195 200 205
 Tyr Asn Asn Val Val Leu Asp Gly Tyr Leu Asn Glu Ile Ser Val Glu
 210 215 220
 Asp Thr Lys Lys Arg Phe Glu Ala Tyr Gly Trp Glu Tyr Tyr Glu Ile
 225 230 235 240
 Asp Gly Tyr Asp Phe Thr His Ile His Glu Thr Phe Ser Ser Ile Lys
 245 250 255
 Arg Gly Gln Glu Arg Pro Val Leu Val Ile Ala His Thr Ile Ile Gly
 260 265 270
 His Gly Ser Pro Lys Glu Gly Thr Asn Lys Ala His Gly Ser Pro Leu
 275 280 285
 Gly Val Glu Gly Thr His Glu Thr Lys Gln Phe Trp His Leu Pro Glu
 290 295 300
 Glu Lys Phe Phe Val Pro Pro Ala Val Lys Asn Phe Phe Ala His Lys
 305 310 315 320
 Ile Gln Glu Asp Arg Lys Ala Gln Glu Gln Trp Leu Asp Glu Val Arg
 325 330 335
 Val Trp Ser Lys Gln Phe Pro Glu Leu His Glu Glu Phe Val Ala Leu
 340 345 350
 Thr Ser His Lys Leu Pro Lys Asn Leu Glu Ser Leu Val Gln Ser Val
 355 360 365
 Glu Met Pro Asp Ser Ile Ala Gly Arg Ala Ala Ser Asn Lys Leu Ile
 370 375 380
 Gln Val Leu Val Gln His Ile Pro Tyr Leu Ile Gly Gly Ser Ala Asp
 385 390 395 400
 Leu Ser Ser Ser Asp Gly Thr Trp Ile Ala Asn Glu Lys Val Ile His
 405 410 415
 Thr Tyr Asp Phe Ser Gly Arg Asn Ile Lys Tyr Gly Val Arg Glu Phe
 420 425 430
 Gly Met Ala Thr Ile Met Asn Gly Leu Ala Tyr Ser Gln Val Phe Arg
 435 440 445
 Pro Phe Gly Gly Thr Phe Leu Val Phe Ser Asp Tyr Met Arg Asn Ala
 450 455 460
 Ile Arg Leu Ala Ala Leu Ser Lys Leu Pro Val Ile Tyr Gln Phe Thr
 465 470 475 480
 His Asp Ser Ile Phe Val Gly Glu Asp Gly Pro Thr His Gln Pro Val
 485 490 495

Glu Gln Leu Met Ser Leu Arg Ala Ile Pro Gly Leu Tyr Val Ile Arg
 500 505 510
 Pro Ala Asp Ala Asn Glu Val Arg Gly Ala Trp Ile Ala Gly Leu Lys
 515 520 525
 His Thr Gly Pro Thr Val Ile Val Leu Ser Arg Gln Ala Leu Pro Thr
 530 535 540
 Leu Pro Ala Ala His Arg Pro Phe Lys Asp Gly Val Gly Arg Gly Ala
 545 550 555 560
 Tyr Ile Val Leu Lys Glu Ser Gly Glu Lys Pro Asp Tyr Thr Leu Phe
 565 570 575
 Ala Thr Gly Ser Glu Val Ser Leu Ala Leu Ser Val Ala Lys Glu Leu
 580 585 590
 Glu His Leu Asp Lys Gln Val Arg Val Val Ser Phe Pro Cys Trp Glu
 595 600 605
 Leu Phe Glu Ala Gln Asp Val Asp Tyr Lys Gln Ser Ile Val Gly Gly
 610 615 620
 Asp Leu Gly Ile Arg Val Ser Ile Glu Ala Gly Ser Ala Leu Gly Trp
 625 630 635 640
 Tyr Lys Tyr Ile Gly Ser Glu Gly Leu Leu Ser Leu Trp Ile Asp Ser
 645 650 655
 Asp Thr Gln Glu Leu Leu Met Met Tyr Gln Lys Asn Val Ala Leu Leu
 660 665 670
 Gln Ser Lys Ser Phe Arg Gly Phe Ser Leu Asn Ser His Cys Arg Lys
 675 680 685
 Phe Gln Ser Arg
 690
 <210>967
 <211>312
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>967
 Pro Arg Asn Asp Lys Asn Ala Lys Asn Leu Arg Arg Lys His Tyr Lys
 1 5 10 15
 Gly Glu Arg Val Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp
 20 25 30
 Met Leu Glu Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr
 35 40 45
 Leu Leu Leu Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu
 50 55 60
 His Gly Val Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala
 65 70 75 80
 Pro His Leu Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly
 85 90 95
 Ala Ala Leu Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala
 100 105 110
 Ala Leu Met Leu Gly Met Cys Gly Glu Arg Ser His Tyr Gln Val
 115 120 125
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser
 130 135 140
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 145 150 155 160
 Gln Lys Ala Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His
 165 170 175
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 180 185 190
 Lys Phe Arg Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met
 195 200 205
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile
 210 215 220
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile
 225 230 235 240
 Lys Thr Lys Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp
 245 250 255
 His Ile Leu Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met

260 265 270
 Leu Lys Arg Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly
 275 280 285
 Leu Pro His Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly
 290 295 300
 Ser Glu Thr Ser Asp Ser Asp Tyr
 305 310

<210>968

<211>190

<212>PRT

<213>Chlamydia pneumoniae

<400>968

Met Val Arg Val Ser Thr Ser Glu Phe Arg Val Gly Leu Arg Ile Glu
 1 5 10 15
 Ile Asp Gly Gln Pro Tyr Leu Ile Leu Gln Asn Asp Phe Val Lys Pro
 20 25 30
 Gly Lys Gly Gln Ala Phe Asn Arg Ile Lys Val Lys Asn Phe Leu Thr
 35 40 45
 Gly Arg Val Ile Glu Arg Thr Tyr Lys Ser Gly Glu Ser Val Glu Thr
 50 55 60
 Ala Asp Ile Val Glu Arg Ser Met Arg Leu Leu Tyr Thr Asp Gln Glu
 65 70 75 80
 Gly Ala Thr Phe Met Asp Asp Glu Thr Phe Glu Gln Glu Val Val Phe
 85 90 95
 Trp Glu Lys Leu Glu Asn Ile Arg Gln Trp Leu Leu Glu Asp Thr Ile
 100 105 110
 Tyr Thr Leu Val Leu Tyr Asn Gly Asp Val Val Ala Val Glu Pro Pro
 115 120 125
 Ile Phe Met Glu Leu Ser Ile Ala Glu Thr Ala Pro Gly Val Arg Gly
 130 135 140
 Asp Thr Ala Ser Gly Arg Val Leu Lys Pro Ala Val Thr Asn Thr Gly
 145 150 155 160
 Ala Lys Ile Met Val Pro Ile Phe Ile Asp Glu Gly Glu Leu Val Lys
 165 170 175
 Val Asp Thr Arg Thr Gly Ser Tyr Glu Ser Arg Val Ser Lys
 180 185 190

<210>969

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>969

Glu Lys Tyr Phe Phe Phe Thr Val Arg Asn Met Glu Ala Lys Lys Ile
 1 5 10 15
 Lys Glu Leu Ser Lys Glu Ala Gln Leu Leu Lys Lys Leu Arg Glu Lys
 20 25 30
 Ser Arg Val Leu Asp Glu Lys Asn Lys Arg Lys Ala Trp Val Ala Lys
 35 40 45
 Leu Val Ala Met Pro Glu Ser Ile Arg Glu Ile Glu Lys Glu Glu Arg
 50 55 60
 Val Glu Thr Pro Gln Leu Phe Gln Ala Ile Ala Glu Lys Ile Leu Glu
 65 70 75 80
 Glu Gly Val

<210>970

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>970

Asn Phe Ser Leu Asp Ser Asn Thr Val Asp Gln Lys Asn Lys Ser Asn
 1 5 10 15
 Pro Arg Pro Met Gln Glu Lys Pro Arg His Val His Arg Ile Ile His
 20 25 30
 Ile Ser Asp Val His Phe His Val Leu Pro Val Asn Pro Val His Cys
 35 40 45

Phe Asn Lys Arg Leu Lys Gly Leu Leu Arg Lys Val Phe Gly Leu Val
 50 55 60
 His Phe Gln Ala Thr Thr Ile Gly Gln Arg Phe Pro Lys Val Val Arg
 65 70 75 80
 Ser Leu Gly Ala Asp Ser Val Cys Ile Thr Gly Asp Phe Ser Leu Thr
 85 90 95
 Ala Met Asp Gly Glu Phe Leu Leu Ala Lys His Phe Val Glu Thr Leu
 100 105 110
 Ala Lys His Ser Ser Val Tyr Leu Leu Pro Gly Asn His Asp Val Tyr
 115 120 125
 Thr Leu Lys Ser Leu Ala Gln Gln Thr Phe Tyr Thr His Phe Pro Asn
 130 135 140
 Asp Gln Leu Gln Gln Asn Lys Val Ser Phe His Lys Ile Thr Asp His
 145 150 155 160
 Trp Trp Leu Ile Leu Leu Asp Cys Ser Cys Leu Asn Gly Trp Phe Ser
 165 170 175
 Ala Asn Gly Val Val His Leu Ala Gln Ile Ser Ala Ile Glu Thr Phe
 180 185 190
 Leu Leu Ser Leu Ser Pro Glu Glu Asn Val Ile Ile Ala Asn His Tyr
 195 200 205
 Pro Leu Leu Ser Ser Gln Asn Pro Ser His Asp Leu Ile Asn Asn Thr
 210 215 220
 His Leu Gln Asn Val Leu Lys Lys Tyr Pro Lys Val Arg Leu Tyr Leu
 225 230 235 240
 His Gly His Glu His Gln Ala Ala Val Tyr Asn Cys Ala Asp Thr Ser
 245 250 255
 Pro Ser Tyr Ile Leu Asn Ser Gly Ser Ile Ser Leu Pro Thr Asn Ser
 260 265 270
 Arg Phe His Val Ile Asp Leu Tyr Pro Glu Lys Tyr Gln Val His Thr
 275 280 285
 Met Ile Leu Lys Asn Leu Leu Asp Phe Asp Ala Pro Leu Glu Ile Ala
 290 295 300
 Asn Glu Ala Thr Trp Asp Cys Gln Lys Leu
 305 310

<210>971

<211>519

<212>PRT

<213>Chlamydia pneumoniae

<400>971

Met Ser Glu Gln Glu Lys Leu Ser Asn Tyr Asn Ala Asp Lys Lys Leu
 1 5 10 15
 Phe Ser Gly Ile Asp Lys Leu Phe Gln Ile Val Lys Gly Ser Tyr Gly
 20 25 30
 Pro Lys Gln Ser Leu Ser Pro Thr Ser Phe Phe Lys Glu Arg Gly Phe
 35 40 45
 Tyr Ala Ile Ser Gln Thr Glu Leu Ser Asn Ser Tyr Glu Asn Leu Gly
 50 55 60
 Val Asp Phe Ala Lys Ala Met Val Asn Lys Ile His Lys Glu His Ser
 65 70 75 80
 Asp Gly Ala Thr Thr Gly Leu Ile Leu Leu His Ala Ile Leu Gln Glu
 85 90 95
 Ser Tyr Ala Ala Leu Glu Lys Gly Ile Ser Thr His Lys Leu Ile Ala
 100 105 110
 Ser Leu Lys Leu Gln Gly Glu Lys Leu Gln Glu Ala Leu Gln Gln Gln
 115 120 125
 Ser Trp Pro Ile Lys Asp Ala Leu Lys Val Arg Asn Ile Ile Phe Ser
 130 135 140
 Ser Leu His Met Pro Thr Ile Ala Asp His Phe Tyr Asn Ala Phe Ser
 145 150 155 160
 Val Val Gly Pro Glu Gly Leu Ile Ser Ile Thr Lys Glu Arg Glu Asn
 165 170 175
 Asp Lys Thr Ser Met Asp Val Phe Gln Gly Phe Lys Ile Pro Ala Gly
 180 185 190
 Tyr Ala Ser Thr Tyr Phe Val Ser Asp Thr Ala Ser Arg Leu Thr Arg

195 200 205
 Ile Ala His Pro Leu Ile Leu Ile Thr Asp Arg Lys Ile Ser Met Ile
 210 215 220
 His Ser Leu Leu Pro Leu Leu Gln Glu Ile Ser Glu Gln Asn Gln His
 225 230 235 240
 Leu Ile Ile Phe Cys Glu Asp Ile Asp Pro Asp Val Leu Ala Thr Leu
 245 250 255
 Val Val Asn Lys Leu Gln Gly Leu Leu Gln Val Thr Val Val Thr Ile
 260 265 270
 Pro Gln Leu Ser Thr Thr Asn Gln Glu Leu Ala Glu Asp Ile Ala Leu
 275 280 285
 Phe Thr Gly Thr His Ile Cys Pro Cys Gln Glu Ala Ser His Val Leu
 290 295 300
 Ala Pro Glu Met Val Thr Leu Gly Ser Cys Leu Ser Ile Glu Ile Ser
 305 310 315 320
 Glu Ser Gln Thr Thr Leu Ile Gly Gly Leu His Ile Pro Glu Val Leu
 325 330 335
 Thr Leu Lys Thr Arg Gln Leu Ala Glu Glu Ile Arg Thr Thr Ser Cys
 340 345 350
 Leu Glu Thr Lys Lys Arg Leu Ile Lys Ser Thr Asn Arg Leu Gln Ser
 355 360 365
 Ser Val Ala Ile Leu Pro Thr Asp Glu Asp Asn Glu Pro Leu Tyr Thr
 370 375 380
 Leu Ala Leu Lys Ile Met Glu Ser Ala Leu Ser Arg Gly Tyr Val Pro
 385 390 395 400
 Gly Gly Gly Val Ala Leu Phe Tyr Ala Ser Leu Thr Leu Gly Thr Pro
 405 410 415
 Lys Asp Asp Ala Asp Glu Asn Ser Ile Ala Ile Ser Leu Leu Gln Lys
 420 425 430
 Ala Cys Cys Ala Pro Leu Lys Leu Leu Ala Thr Asn Ala Asp Leu Asp
 435 440 445
 Gly Asp Ala Val Ile Ala Lys Leu Ser Ser Leu Gly Thr Thr Ser Leu
 450 455 460
 Gly Ile Ser Val Phe Ser Arg Glu Ile Glu Asp Leu Ile Ala Gly Gly
 465 470 475 480
 Ile Leu Asp Ser Leu Ala Thr Thr Ser Thr Ile Leu Ala Gln Ala Leu
 485 490 495
 Asp Thr Ala Ile Leu Val Leu Ser Ser Lys Ile Leu Ile Leu Glu Asn
 500 505 510
 Gln Tyr Glu Ile Ser Thr Leu
 515

<210>972

<211>447

<212>PRT

<213>Chlamydia pneumoniae

<400>972

Met Arg Ala Met Leu Leu Glu Asp Trp Val Ser Leu Met Leu Ser Asp
 1 5 10 15
 Val Ser Cys Pro Lys Cys Asp Lys Lys Ile Thr Gly Phe Ala Ile Asp
 20 25 30
 Ser Gln Lys Val Gln Pro Gly Asp Leu Phe Phe Ala Leu Pro Gly Asn
 35 40 45
 Ala Thr Asp Gly His Gln Phe Leu Lys His Ala Ala Thr Ala Gly Ala
 50 55 60
 Val Ala Ala Val Val Ser His Asp Tyr Gln Gly Asp Ser Phe Gly Leu
 65 70 75 80
 Glu Leu Ile Arg Val Asp Asp Thr Lys Ser Ala Leu Gln Glu Ala Gly
 85 90 95
 Ser Asn Gln Cys Asn Leu Phe Gln Gly Thr Leu Val Gly Ile Thr Gly
 100 105 110
 Ser Val Gly Lys Thr Thr Thr Lys Glu Phe Ser Lys Thr Ile Leu Ser
 115 120 125
 Ser Ile Tyr Lys Thr His Ala Ser Pro Lys Ser Tyr Asn Ser Gln Leu
 130 135 140

Thr Val Pro Leu Ser Leu Leu Met Ala Glu Gly Asp Glu Asp Val Met
 145 150 155 160
 Ile Leu Glu Met Gly Val Ser Glu Pro Gly Asn Met Gln Asp Leu Leu
 165 170 175
 Arg Ile Val Gln Pro Glu Ile Ala Val Ile Thr His Ile Asn Asp Gln
 180 185 190
 His Ala Met His Phe Pro Gln Gly Ile Gln Glu Ile Leu Lys Glu Lys
 195 200 205
 Ser Tyr Ile Leu Gln Lys Ser Lys Leu Gln Leu Leu Pro Lys Asp Ser
 210 215 220
 Pro Tyr Tyr Leu Asp Leu Arg Ser Cys Ser Pro Thr Ala Glu Lys Phe
 225 230 235 240
 Ser Phe Ser Phe Asn Asp Pro Leu Ala Asp Phe Cys Tyr Lys Ala Ile
 245 250 255
 Ser Gly Asp Ser Val Val Ile Gln Thr Pro Glu Glu Asn Tyr Cys Leu
 260 265 270
 Pro Ile Ala Phe Ser Tyr Lys Pro Ala Tyr Thr Asn Leu Leu Ile Ala
 275 280 285
 Val Ala Leu Ser Trp Ile Leu Glu Val Pro Glu Glu Gly Val Ile Arg
 290 295 300
 Ser Leu Pro Glu Leu Lys Leu Pro Pro Met Arg Phe Glu His Ser Met
 305 310 315 320
 Arg Asn Gly Met Gln Val Ile Asn Asp Ala Tyr Asn Ala Cys Pro Glu
 325 330 335
 Ala Met Ile Ala Ala Leu Asp Ala Leu Pro Leu Pro Ser Asp Gly Gly
 340 345 350
 Lys Ile Ile Leu Ile Leu Gly His Met Ala Glu Leu Gly Arg Tyr Ser
 355 360 365
 Glu Glu Gly His Ala Leu Val Ala Glu Lys Ala Ala Ser Arg Gly Asp
 370 375 380
 Met Ile Phe Phe Ile Gly Glu Lys Trp Ile Pro Val Gln Ser Val Leu
 385 390 395 400
 Lys Ser Tyr Ser Cys Glu Val Ser Phe Phe Ser Ser Ala Gln Asp Val
 405 410 415
 Lys Asp Ile Leu Lys Gln Val Ala Arg Tyr Gly Asp Val Ile Leu Leu
 420 425 430
 Lys Gly Ser Arg Ala Leu Ala Leu Glu Ser Leu Leu Ala Cys Phe
 435 440 445

<210>973

<211>349

<212>PRT

<213>Chlamydia pneumoniae

<400>973

Met Ile Pro Leu Ile Pro Met Phe Leu Lys Gln Ser Leu Phe Phe Ser
 1 5 10 15
 Leu Ala Leu Thr Gly Met Thr Thr Leu Val Leu Thr Val Ser Leu Gly
 20 25 30
 Val Pro Val Met Lys Trp Leu Lys Arg Lys Asn Tyr Arg Asp Tyr Ile
 35 40 45
 His Lys Glu Tyr Cys Glu Lys Leu Glu Met Leu His Lys Asp Lys Ala
 50 55 60
 Glu Val Pro Thr Gly Gly Gly Val Leu Leu Phe Ile Ser Leu Ile Ala
 65 70 75 80
 Ser Leu Leu Val Trp Leu Pro Trp Gly Lys Phe Ser Thr Trp Phe Phe
 85 90 95
 Ile Ile Leu Leu Thr Cys Tyr Ala Gly Leu Gly Trp Tyr Asp Asp Arg
 100 105 110
 Ile Lys Ile Lys Arg Lys Gln Gly His Gly Leu Lys Ala Lys His Lys
 115 120 125
 Phe Met Val Gln Ile Ala Ile Ala Ala Phe Thr Leu Ile Ala Leu Pro
 130 135 140
 Tyr Ile Tyr Gly Ser Thr Glu Pro Leu Trp Thr Leu Lys Ile Pro Phe
 145 150 155 160
 Met Glu Gly Met Leu Ser Leu Pro Phe Trp Leu Gly Lys Val Phe Cys

165 170 175
 Leu Gly Leu Ala Leu Val Ala Ile Ile Gly Thr Ser Asn Ala Val Asn
 180 185 190
 Leu Thr Asp Gly Leu Asp Gly Leu Ala Ala Gly Thr Met Ser Phe Ala
 195 200 205
 Ala Leu Gly Phe Ile Phe Val Ala Leu Arg Ser Ser Thr Ile Pro Ile
 210 215 220
 Ala Gln Asp Val Ala Tyr Val Leu Ala Ala Leu Val Gly Ala Cys Ile
 225 230 235 240
 Gly Phe Leu Trp Tyr Asn Gly Phe Pro Ala Gln Leu Phe Met Gly Asp
 245 250 255
 Thr Gly Ser Leu Leu Leu Gly Gly Leu Leu Gly Ser Cys Ala Val Met
 260 265 270
 Leu Arg Ala Glu Cys Ile Leu Val Val Ile Gly Gly Val Phe Val Ala
 275 280 285
 Glu Ala Gly Ser Val Ile Leu Gln Val Leu Ser Cys Arg Leu Arg Lys
 290 295 300
 Lys Arg Leu Phe Leu Cys Ser Pro Leu His His His Tyr Glu Tyr Gln
 305 310 315 320
 Gly Leu Pro Glu Thr Lys Ile Val Met Arg Phe Trp Ile Phe Ser Phe
 325 330 335
 Val Cys Ala Gly Leu Gly Ile Ala Ala Val Leu Trp Arg
 340 345

<210>974

<211>419

<212>PRT

<213>Chlamydia pneumoniae

<400>974

Met Arg Arg Ser Arg Tyr Ser Gly Cys Leu Met Glu Ile Asp Met Cys
 1 5 10 15
 Gln Arg Ile Leu Ile Leu Gly Thr Gly Ile Thr Gly Lys Ser Val Ala
 20 25 30
 Arg Phe Leu Tyr Gln Gln Gly His Tyr Leu Ile Gly Ala Asp Asn Ser
 35 40 45
 Leu Glu Ser Leu Ile Ser Val Asp His Leu His Asp Arg Leu Leu Met
 50 55 60
 Gly Ala Ser Glu Phe Pro Glu Asn Ile Asp Leu Val Ile Arg Ser Pro
 65 70 75 80
 Gly Ile Lys Pro Tyr His Pro Trp Val Glu Gln Ala Val Ser Leu Lys
 85 90 95
 Ile Pro Val Val Thr Asp Ile Gln Val Ala Leu Lys Thr Pro Glu Phe
 100 105 110
 Gln Arg Tyr Pro Ser Phe Gly Ile Thr Gly Ser Asn Gly Lys Thr Thr
 115 120 125
 Thr Thr Leu Phe Leu Thr His Leu Leu Asn Thr Leu Gly Ile Pro Ala
 130 135 140
 Ile Ala Met Gly Asn Ile Gly Leu Pro Ile Leu Asp His Met Gly Gln
 145 150 155 160
 Pro Gly Val Arg Val Val Glu Ile Ser Ser Phe Gln Leu Ala Thr Gln
 165 170 175
 Glu Glu His Ile Pro Ala Leu Ser Gly Ser Val Phe Leu Asn Phe Ser
 180 185 190
 Arg Asn His Leu Asp Tyr His Arg Asn Leu Asp Ala Tyr Phe Asp Ala
 195 200 205
 Lys Leu Arg Ile Gln Lys Cys Leu Arg Gln Asp Lys Thr Phe Trp Val
 210 215 220
 Trp Glu Glu Cys Ser Leu Gly Asn Ser Tyr Gln Ile Tyr Ser Glu Glu
 225 230 235 240
 Ile Glu Glu Ile Leu Asp Lys Gly Asp Ala Leu Lys Pro Ile Tyr Leu
 245 250 255
 His Asp Arg Asp Asn Tyr Cys Ala Ala Tyr Ala Leu Ala Asn Glu Val
 260 265 270
 Gly Trp Val Ser Pro Glu Gly Phe Leu Lys Ala Ile Arg Thr Phe Glu
 275 280 285

Lys Pro Ala His Arg Leu Glu Tyr Leu Gly Lys Lys Asp Gly Val His
 290 295 300
 Tyr Ile Asn Asp Ser Lys Ala Thr Thr Val Thr Ala Val Glu Lys Ala
 305 310 315 320
 Leu Met Ala Val Gly Lys Asp Val Ile Val Ile Leu Gly Gly Lys Asp
 325 330 335
 Lys Gly Gly Asp Phe Pro Ala Leu Ala Ser Val Leu Ser Gln Thr Thr
 340 345 350
 Lys His Val Ile Ala Met Gly Glu Cys Arg Gln Thr Ile Ala Asp Ala
 355 360 365
 Leu Ser Glu Lys Ile Pro Leu Thr Leu Ser Lys Asp Leu Gln Glu Ala
 370 375 380
 Val Ser Ile Ala Gln Thr Ile Ala Gln Glu Gly Asp Thr Val Leu Leu
 385 390 395 400
 Ser Pro Gly Cys Ala Xaa Leu Ile Ser Phe Lys Val Leu Lys Asn Ala
 405 410 415
 Xaa Leu Leu

<210>975

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>975

Arg Thr Arg Xaa Tyr Phe Lys Leu Leu Ile Arg Arg Asn Ala Gly Ser
 1 5 10 15
 Glu Val Asn Met Asn Arg Arg Asp Met Val Ile Thr Ala Val Val Val
 20 25 30
 Asn Ala Ile Leu Leu Val Ala Leu Phe Val Thr Ser Lys Arg Ile Gly
 35 40 45
 Val Lys Asp Tyr Asp Glu Gly Phe Arg Asn Phe Ala Ser Ser Lys Val
 50 55 60
 Thr Gln Ala Val Val Ser Glu Glu Lys Val Ile Glu Lys Pro Val Val
 65 70 75 80
 Ala Glu Val Pro Ser Arg Pro Ile Ala Lys Glu Thr Leu Ala Ala Gln
 85 90 95
 Phe Ile Glu Ser Lys Pro Val Ile Val Thr Thr Pro Pro Val Pro Val
 100 105 110
 Val Ser Glu Thr Pro Glu Val Pro Thr Val Ala Val Pro Pro Gln Pro
 115 120 125
 Val Arg Glu Thr Val Lys Glu Glu Gln Ala Pro Tyr Ala Thr Val Val
 130 135 140
 Val Lys Lys Gly Asp Phe Leu Glu Arg Ile Ala Arg Ala Asn His Thr
 145 150 155 160
 Thr Val Ala Lys Leu Met Gln Ile Asn Asp Leu Thr Thr Thr Gln Leu
 165 170 175
 Lys Ile Gly Gln Val Ile Lys Val Pro Thr Ser Gln Asp Val Ser Asn
 180 185 190
 Glu Lys Thr Pro Gln Thr Gln Thr Ala Asn Pro Glu Asn Tyr Tyr Ile
 195 200 205
 Val Gln Glu Gly Asp Ser Pro Trp Thr Ile Ala Leu Arg Asn His Ile
 210 215 220
 Arg Leu Asp Asp Leu Leu Lys Met Asn Asp Leu Asp Glu Tyr Lys Ala
 225 230 235 240
 Arg Arg Leu Lys Pro Gly Asp Gln Leu Arg Ile Arg
 245 250

<210>976

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>976

Met Lys Trp Phe Val Ile Ser Cys Leu Leu Gly Ile Phe Ser Leu Gly
 1 5 10 15
 Leu Ile Met Val Phe Glu Thr Ser Ser Ala Glu Val Leu Asp Arg Ser
 20 25 30

Leu Glu Cys Ser Thr His Lys Ala Leu Ile Arg Gln Val Thr Tyr Leu
 35 40 45
 Ile Leu Gly Leu Gly Val Ala Ser Leu Leu Tyr Met Met Glu Trp Arg
 50 55 60
 Asp Phe Leu Lys Ile Ser Pro Val Leu Leu Ser Gly Ala Ala Leu Ala
 65 70 75 80
 Leu Ile Cys Val Phe Ile Pro Gly Leu Gly Ile Cys Arg Asn Gly Ala
 85 90 95
 Arg Arg Trp Leu Gly Phe Gly Gln Leu Thr Ile Gln Pro Ser Glu Phe
 100 105 110
 Val Lys Tyr Leu Val Pro Ile Val Ala Leu Tyr Phe Leu Thr Phe Ser
 115 120 125
 Ser Leu Tyr Gln Lys Gln Leu Lys Met Phe Leu Lys Leu Thr Ala Ile
 130 135 140
 Leu Phe Ile Pro Ile Leu Leu Ile Ala Ile Glu Pro Asp Asn Gly Ser
 145 150 155 160
 Ala Ala Val Ile Ser Ala Ser Leu Ile Pro Val Phe Ile Met Thr Ser
 165 170 175
 Val Arg Leu Arg Tyr Trp Leu Leu Pro Leu Leu Cys Val Leu Ile Ala
 180 185 190
 Gly Gly Ala Leu Ala Tyr Arg Met Pro Tyr Val Arg Tyr Arg Leu Asn
 195 200 205
 Val Tyr Leu His Pro Glu Leu Asp Ile Lys Gly Arg Gly His Gln Pro
 210 215 220
 Tyr Gln Ala Lys Ile Ala Ala Gly Ser Gly Lys Leu Leu Gly Lys Gly
 225 230 235 240
 Pro Gly Ala Ser Leu Gln Lys Leu Thr Tyr Leu Pro Glu Ala Gln Asn
 245 250 255
 Asp Tyr Ile Ala Ala Ile Tyr Ala Glu Glu Phe Gly Phe Leu Gly Met
 260 265 270
 Leu Val Leu Ile Leu Leu Tyr Met Cys Phe Val Tyr Gly Gly Tyr Ala
 275 280 285
 Ile Ala Ile Lys Ala Ser Ser Leu Glu Gly Ala Ala Leu Ala Met Val
 290 295 300
 Ile Thr Leu Ile Ile Ser Met Gln Ala Phe Met Asn Leu Gly Val Val
 305 310 315 320
 Ser Gly Leu Leu Pro Ser Lys Gly Val Asn Leu Pro Phe Phe Ser Gln
 325 330 335
 Gly Gly Ser Ser Leu Ile Ala Asn Met Cys Gly Val Thr Leu Leu Leu
 340 345 350
 Lys Val Tyr Asp Glu Glu Asn Ser Lys Ser Ser Leu Gly Cys Arg Arg
 355 360 365
 Phe Arg Arg Pro His Cys Pro Ser Ser Leu Gly Lys Gly Ser Phe Phe
 370 375 380
 Ser
 385
 <210>977
 <211>357
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>977
 Met Met Lys Lys Ile Arg Lys Val Ala Leu Ala Val Gly Gly Ser Gly
 1 5 10 15
 Gly His Ile Val Pro Ala Leu Ser Val Lys Glu Ala Phe Ser Arg Glu
 20 25 30
 Gly Ile Asp Val Leu Leu Leu Gly Lys Gly Leu Lys Asn His Pro Ser
 35 40 45
 Leu Gln Gln Gly Ile Ser Tyr Arg Glu Ile Pro Ser Gly Leu Pro Thr
 50 55 60
 Val Leu Asn Pro Ile Lys Ile Met Ser Arg Thr Leu Ser Leu Cys Ser
 65 70 75 80
 Gly Tyr Leu Lys Ala Arg Lys Glu Leu Lys Ile Phe Asp Pro Asp Leu
 85 90 95
 Val Ile Gly Phe Gly Ser Tyr His Ser Leu Pro Val Leu Leu Ala Gly

```

      100      105      110
Leu Ser His Lys Ile Pro Leu Phe Leu His Glu Gln Asn Leu Val Pro
      115      120      125
Gly Lys Val Asn Gln Leu Phe Ser Arg Tyr Ala Arg Gly Ile Gly Val
      130      135      140
Asn Phe Ser Pro Val Thr Lys His Phe Arg Cys Pro Ala Glu Glu Val
145      150      155      160
Phe Leu Pro Lys Arg Ser Phe Ser Leu Gly Ser Pro Met Met Lys Arg
      165      170      175
Cys Thr Asn His Thr Pro Thr Ile Cys Val Val Gly Gly Ser Gln Gly
      180      185      190
Ala Gln Ile Leu Asn Thr Cys Val Pro Gln Ala Leu Val Lys Leu Val
      195      200      205
Asn Lys Tyr Pro Asn Met Tyr Val His His Ile Val Gly Pro Lys Ser
210      215      220
Asp Val Met Lys Val Gln His Val Tyr Asn Arg Gly Glu Val Leu Cys
225      230      235      240
Cys Val Lys Pro Phe Glu Glu Gln Leu Leu Asp Val Leu Leu Ala Ala
      245      250      255
Asp Leu Val Ile Ser Arg Ala Gly Ala Thr Ile Leu Glu Glu Ile Leu
      260      265      270
Trp Ala Lys Val Pro Gly Ile Leu Ile Pro Tyr Pro Gly Ala Tyr Gly
275      280      285
His Gln Glu Val Asn Ala Lys Phe Phe Val Asp Val Leu Glu Gly Gly
290      295      300
Thr Met Ile Leu Glu Lys Glu Leu Thr Glu Lys Leu Leu Val Glu Lys
305      310      315      320
Val Thr Phe Ala Leu Asp Ser His Asn Arg Glu Lys Gln Arg Asn Ser
      325      330      335
Leu Ala Ala Tyr Ser Gln Gln Arg Ser Thr Lys Thr Phe His Ala Phe
      340      345      350
Ile Cys Glu Cys Leu
      355

```

<210>978

<211>812

<212>PRT

<213>Chlamydia pneumoniae

<400>978

```

Val His Tyr Met Lys Gly Thr Pro Gln Tyr His Phe Ile Gly Ile Gly
  1      5      10      15
Gly Ile Gly Met Ser Ala Leu Ala His Ile Leu Leu Asp Arg Gly Tyr
      20      25      30
Glu Val Ser Gly Ser Asp Leu Tyr Glu Ser Tyr Thr Ile Glu Ser Leu
      35      40      45
Lys Ala Lys Gly Ala Arg Cys Phe Ser Gly His Asp Ser Ser His Val
      50      55      60
Pro His Asp Ala Val Val Tyr Ser Ser Ser Ile Ala Pro Asp Asn
      65      70      75      80
Val Glu Tyr Leu Thr Ala Ile Gln Arg Ser Ser Arg Leu Leu His Arg
      85      90      95
Ala Glu Leu Leu Ser Gln Leu Met Glu Gly Tyr Glu Ser Ile Leu Val
      100      105      110
Ser Gly Ser His Gly Lys Thr Gly Thr Ser Ser Leu Ile Arg Ala Ile
      115      120      125
Phe Gln Glu Ala Gln Lys Asp Pro Ser Tyr Ala Ile Gly Gly Leu Ala
      130      135      140
Ala Asn Cys Leu Asn Gly Tyr Ser Gly Ser Ser Lys Ile Phe Val Ala
145      150      155      160
Glu Ala Asp Glu Ser Asp Gly Ser Leu Lys His Tyr Thr Pro Arg Ala
      165      170      175
Val Val Ile Thr Asn Ile Asp Asn Glu His Leu Asn Asn Tyr Ala Gly
      180      185      190
Asn Leu Asp Asn Leu Val Gln Val Ile Gln Asp Phe Ser Arg Lys Val
      195      200      205

```

Thr	Asp	Leu	Asn	Lys	Val	Phe	Tyr	Asn	Gly	Asp	Cys	Pro	Ile	Leu	Lys
210						215					220				
Gly	Asn	Val	Gln	Gly	Ile	Ser	Tyr	Gly	Tyr	Ser	Pro	Glu	Cys	Gln	Leu
225					230					235					240
His	Ile	Val	Ser	Tyr	Asn	Gln	Lys	Ala	Trp	Gln	Ser	His	Phe	Ser	Phe
				245					250					255	
Thr	Phe	Leu	Gly	Gln	Glu	Tyr	Gln	Asp	Ile	Glu	Leu	Asn	Leu	Pro	Gly
			260					265					270		
Gln	His	Asn	Ala	Ala	Asn	Ala	Ala	Ala	Cys	Gly	Val	Ala	Leu	Thr	
		275					280				285				
Phe	Gly	Ile	Asp	Ile	Asn	Ile	Ile	Arg	Lys	Ala	Leu	Lys	Lys	Phe	Ser
290						295					300				
Gly	Val	His	Arg	Arg	Leu	Glu	Arg	Lys	Asn	Ile	Ser	Glu	Ser	Phe	Leu
305					310					315					320
Phe	Leu	Glu	Asp	Tyr	Ala	His	His	Pro	Val	Glu	Val	Ala	His	Thr	Leu
				325					330					335	
Arg	Ser	Val	Arg	Asp	Ala	Val	Gly	Leu	Arg	Arg	Val	Ile	Ala	Ile	Phe
			340					345					350		
Gln	Pro	His	Arg	Phe	Ser	Arg	Leu	Glu	Glu	Cys	Leu	Gln	Thr	Phe	Pro
		355					360					365			
Lys	Ala	Phe	Gln	Glu	Ala	Asp	Glu	Val	Ile	Leu	Thr	Asp	Val	Tyr	Ser
370						375					380				
Ala	Gly	Glu	Ser	Pro	Arg	Glu	Ser	Ile	Ile	Leu	Ser	Asp	Leu	Ala	Glu
385					390					395					400
Gln	Ile	Arg	Lys	Ser	Ser	Tyr	Val	His	Cys	Cys	Tyr	Val	Pro	His	Gly
				405					410					415	
Asp	Ile	Val	Asp	Tyr	Leu	Arg	Asn	Tyr	Ile	Arg	Ile	His	Asp	Val	Cys
			420					425					430		
Val	Ser	Leu	Gly	Ala	Gly	Asn	Ile	Tyr	Thr	Ile	Gly	Glu	Ala	Leu	Lys
		435				440						445			
Asp	Phe	Asn	Pro	Lys	Lys	Leu	Ser	Ile	Gly	Leu	Val	Cys	Gly	Gly	Lys
450						455					460				
Ser	Cys	Glu	His	Asp	Ile	Ser	Leu	Leu	Ser	Ala	Gln	His	Val	Ser	Lys
465					470					475					480
Tyr	Ile	Ser	Pro	Glu	Phe	Tyr	Asp	Val	Ser	Tyr	Phe	Ile	Ile	Asn	Arg
				485					490					495	
Gln	Gly	Leu	Trp	Arg	Thr	Gly	Lys	Asp	Phe	Pro	His	Leu	Ile	Glu	Glu
			500					505					510		
Thr	Gln	Gly	Asp	Ser	Pro	Leu	Ser	Ser	Glu	Ile	Ala	Ser	Ala	Leu	Ala
		515					520					525			
Lys	Val	Asp	Cys	Leu	Phe	Pro	Val	Leu	His	Gly	Pro	Phe	Gly	Glu	Asp
		530				535					540				
Gly	Thr	Ile	Gln	Gly	Phe	Phe	Glu	Ile	Leu	Gly	Lys	Pro	Tyr	Ala	Gly
545					550					555					560
Pro	Ser	Leu	Ser	Leu	Ala	Ala	Thr	Ala	Met	Asp	Lys	Leu	Leu	Thr	Lys
				565					570					575	
Arg	Ile	Ala	Ser	Ala	Val	Gly	Val	Pro	Val	Val	Pro	Tyr	Gln	Pro	Leu
			580					585					590		
Asn	Leu	Cys	Phe	Trp	Lys	Arg	Asn	Pro	Glu	Leu	Cys	Ile	Gln	Asn	Leu
		595					600					605			
Ile	Glu	Thr	Phe	Ser	Phe	Pro	Met	Ile	Val	Lys	Thr	Ala	His	Leu	Gly
610						615					620				
Ser	Ser	Ile	Gly	Ile	Phe	Leu	Val	Arg	Asp	Lys	Glu	Glu	Leu	Gln	Glu
625					630					635					640
Lys	Ile	Ser	Glu	Ala	Phe	Leu	Tyr	Asp	Thr	Asp	Val	Phe	Val	Glu	Glu
				645					650					655	
Ser	Arg	Leu	Gly	Ser	Arg	Glu	Ile	Glu	Val	Ser	Cys	Ile	Gly	His	Ser
			660					665					670		
Ser	Ser	Trp	Tyr	Cys	Met	Ala	Gly	Pro	Asn	Glu	Arg	Cys	Gly	Ala	Ser
		675					680					685			
Gly	Phe	Ile	Asp	Tyr	Gln	Glu	Lys	Tyr	Gly	Phe	Asp	Gly	Ile	Asp	Cys
690						695					700				
Ala	Lys	Ile	Ser	Phe	Asp	Leu	Gln	Leu	Ser	Gln	Glu	Ser	Leu	Asp	Cys
705						710					715				720

Val Arg Glu Leu Ala Glu Arg Val Tyr Arg Ala Met Gln Gly Lys Gly
 725 730 735
 Ser Ala Arg Ile Asp Phe Phe Leu Asp Glu Glu Gly Asn Tyr Trp Leu
 740 745 750
 Ser Glu Val Asn Pro Ile Pro Gly Met Thr Ala Ala Ser Pro Phe Leu
 755 760 765
 Gln Ala Phe Val His Ala Gly Trp Thr Gln Glu Gln Ile Val Asp His
 770 775 780
 Phe Ile Ile Asp Ala Leu His Lys Phe Asp Lys Gln Gln Thr Ile Glu
 785 790 795 800
 Gln Ala Phe Thr Lys Glu Gln Asp Leu Val Lys Arg
 805 810

<210>979

<211>192

<212>PRT

<213>Chlamydia pneumoniae

<400>979

Leu Val Asn Asp Ser Gln Leu Ser Arg Glu Ala Ser Ala Phe Arg Leu
 1 5 10 15
 Asp Ile Asp Phe Phe Ile Leu Asn Ile Tyr Pro Phe Phe Arg Asn Phe
 20 25 30
 Lys Asn Ile Glu Leu Cys Phe Phe Leu Ser Ile Ser Gln Phe Asn Leu
 35 40 45
 Asp Phe Met Glu Glu Phe Val Ala Tyr Ile Val Lys Asn Leu Val Thr
 50 55 60
 Asn Pro Glu Ala Val Glu Ile Arg Ser Ile Glu Asp Glu Asp Asn Glu
 65 70 75 80
 Ser Ile Lys Leu Glu Ile Arg Val Ala Ala Glu Asp Ile Gly Lys Ile
 85 90 95
 Ile Gly Arg Arg Gly Asn Thr Ile His Ala Leu Arg Thr Ile Leu Arg
 100 105 110
 Arg Val Cys Ser Arg Leu Lys Lys Val Gln Ile Asp Leu Val Gln
 115 120 125
 Pro Glu Asn Gly Thr Asp Val Ile Ala Asp Gln Asp Tyr Ile Cys Asp
 130 135 140
 Asn Asp Ser Ser Asn Ser Thr Glu Asp Thr Phe Gly Glu Ser Asp Thr
 145 150 155 160
 Cys Cys Ser Gly His Cys His Tyr Asp Glu Asp Leu Asn Gln Glu Glu
 165 170 175
 Gln Glu Glu Gly Asn Met His His Ser Cys Glu Cys Ser Asn His His
 180 185 190

<210>980

<211>120

<212>PRT

<213>Chlamydia pneumoniae

<400>980

Lys Phe Leu Ile Ile Lys Ser Ser Met Thr Ala Val Leu Ile Leu Thr
 1 5 10 15
 Ser Phe Pro Ser Glu Glu Ser Ala Arg Ser Leu Ala Arg His Leu Ile
 20 25 30
 Thr Glu Arg Leu Ala Ser Cys Val His Val Phe Pro Lys Gly Thr Ser
 35 40 45
 Thr Tyr Leu Trp Glu Gly Lys Leu Cys Glu Ser Glu Glu His His Ile
 50 55 60
 Gln Ile Lys Ser Ile Asp Ile Arg Phe Ser Glu Ile Cys Leu Ala Ile
 65 70 75 80
 Gln Glu Phe Ser Gly Tyr Glu Val Pro Glu Val Leu Leu Phe Pro Ile
 85 90 95
 Glu Asn Gly Asp Pro Arg Tyr Leu Asn Trp Leu Thr Ile Leu Ser Tyr
 100 105 110
 Pro Glu Lys Pro Pro Leu Ser Asp
 115 120

<210>981

<211>213

<212>PRT

<213>Chlamydia pneumoniae

<400>981

```

Ile Leu Ala Ile Leu Phe Met Ile Ile Ile Lys Asn Asn Glu Leu Met
 1           5           10           15
Ile Arg Arg Phe Phe Lys Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser
          20           25           30
Leu Cys Tyr Ala Ser Ile Leu Ile Val Leu Ser Ser Leu Val Cys Val
          35           40           45
Pro Thr Phe Cys Trp Leu Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe
          50           55           60
Asn Pro Ser Pro Ile Arg Asn Leu Phe Leu Val Ser Ser Thr Leu Ser
          65           70           75           80
Lys Val Pro Pro Thr Ala Ile Ala Glu His Leu Arg Leu Ser Ala Asp
          85           90           95
Ala Pro Thr Tyr Leu His Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser
          100          105          110
Leu His Ala Leu Gly Ile Phe Ser Ser Leu Val Ile Glu Lys Ser Pro
          115          120          125
Asp Asn Lys Gly Ile Thr Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala
          130          135          140
Tyr Val Gly Asn Arg Ser Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys
          145          150          155          160
Phe Leu Gly Gln Pro Tyr Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe
          165          170          175
Phe Ser Gln Glu Asp Leu Lys Met Gln Lys Leu Pro Lys Glu Lys Met
          180          185          190
Leu Phe Thr Lys Ile Leu Leu Lys Glu Leu Ala Met Glu Ser Pro Lys
          195          200          205
Ile Ile Asp Leu Ser
          210

```

<210>982

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>982

```

Leu Glu Arg Leu Leu Met Asn Leu Ser Ala Lys Glu Tyr Gly Asp Ile
 1           5           10           15
Ile Val Ile Tyr Leu Gln Gly Ser Leu Asp Ala Val Ser Val Pro Ser
          20           25           30
Val Gln Glu Tyr Leu Glu Gln Phe Ile Gln Lys Lys His Leu Lys Ile
          35           40           45
Ala Leu Asn Phe Thr Asp Val Ser Tyr Ile Ser Ser Ala Gly Ile Arg
          50           55           60
Leu Leu Leu Ser Asn Phe Lys Leu Val Gln Ser Leu Gly Gly Lys Met
          65           70           75           80
Cys Leu Cys Cys Val Lys Glu Ser Val Thr Glu Val Met Arg Ile Ala
          85           90           95
Arg Phe Arg Gln Met Ile Leu Leu Cys Gln Val
          100          105

```

<210>983

<211>342

<212>PRT

<213>Chlamydia pneumoniae

<400>983

```

Met Leu Pro Phe Glu Phe Glu Phe Asn Thr Thr Ser Ser Pro Glu Cys
 1           5           10           15
Asp Val Cys Leu Asp Pro Gln Lys Leu Phe Val Lys Leu Phe Lys Arg
          20           25           30
Thr Ile Val Leu Leu Ser Gly Pro Thr Gly Ser Gly Lys Thr Asp Val
          35           40           45
Ser Leu Ala Leu Ala Pro Met Ile Asp Gly Glu Ile Val Ser Val Asp
          50           55           60
Ser Met Gln Val Tyr Gln Gly Met Asp Ile Gly Thr Ala Lys Val Ser

```

65 70 75 80
 Leu Lys Ala Arg Gln Glu Ile Pro His His Leu Ile Asp Ile Arg His
 85 90 95
 Val Gln Glu Pro Phe Asn Val Val Asp Phe Tyr Tyr Glu Ala Ile Gln
 100 105 110
 Ala Cys Gln Asn Ile Leu Ser Arg Asn Lys Val Pro Ile Leu Val Gly
 115 120 125
 Gly Ser Gly Phe Tyr Phe His Ala Phe Leu Ser Gly Pro Pro Lys Gly
 130 135 140
 Pro Ala Ala Asp Pro Gln Ile Arg Glu Gln Leu Glu Ala Ile Ala Glu
 145 150 155 160
 Glu His Gly Val Ser Ala Leu Tyr Glu Asp Leu Leu Leu Lys Asp Pro
 165 170 175
 Glu Tyr Ala Gln Thr Ile Thr Lys Asn Asp Lys Asn Lys Ile Ile Arg
 180 185 190
 Gly Leu Glu Ile Ile Gln Leu Thr Gly Lys Lys Val Ser Asp His Glu
 195 200 205
 Trp Asp Ile Val Pro Lys Ala Ser Arg Glu Tyr Cys Cys Arg Ala Trp
 210 215 220
 Phe Leu Ser Pro Glu Thr Glu Phe Leu Lys Asn Asn Ile Gln Met Arg
 225 230 235 240
 Cys Glu Ala Met Leu Gln Glu Gly Leu Leu Glu Glu Val Arg Gly Leu
 245 250 255
 Leu Asn Gln Gly Ile Arg Glu Asn Pro Ser Ala Phe Lys Ala Ile Gly
 260 265 270
 Tyr Arg Glu Trp Ile Glu Phe Leu Asp Asn Gly Glu Lys Leu Glu Glu
 275 280 285
 Tyr Glu Glu Thr Lys Arg Lys Phe Val Ser Asn Ser Trp His Tyr Thr
 290 295 300
 Lys Lys Gln Lys Thr Trp Phe Lys Arg Tyr Ser Ile Phe Arg Glu Leu
 305 310 315 320
 Pro Thr Leu Gly Leu Ser Ser Asp Ala Ile Ala Gln Lys Ile Ala Lys
 325 330 335
 Asp Tyr Leu Leu Tyr Ser
 340

<210>984

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>984

Ser Leu Leu Leu Ala Ile Phe Asn Val Asn Tyr Phe Met Asn Leu Cys
 1 5 10 15
 Lys Arg Ile Ser Phe Glu Glu Gly Leu Glu Leu Phe Val Ser Ser Pro
 20 25 30
 Ile Glu Arg Leu Gln Glu Arg Ala Asp Ala Ile Arg Lys Glu Arg Tyr
 35 40 45
 Pro Ser Asn Glu Val Thr Tyr Val Leu Asp Ala Asn Pro Asn Tyr Thr
 50 55 60
 Asn Ile Cys Lys Ile Asp Cys Thr Phe Cys Ala Phe Tyr Arg Lys Pro
 65 70 75 80
 Lys Ser Pro Asp Ala Tyr Leu Leu Ser Phe Asp Glu Val Arg Ser Leu
 85 90 95
 Leu Gln Arg Tyr Val Ser Ser Gly Val Lys Thr Val Leu Leu Gln Gly
 100 105 110
 Gly Val His Pro Gly Leu Gly Ile Asp Tyr Leu Glu Glu Leu Val Arg
 115 120 125
 Ile Thr Val Gln Glu Phe Pro Ser Ile His Pro His Phe Phe Ser Ala
 130 135 140
 Val Glu Ile Glu His Ala Cys Arg Val Ser Gly Ile Ser Ile Glu Gln
 145 150 155 160
 Gly Leu Gln Arg Leu Trp Asp Ala Gly Gln Arg Thr Ile Pro Gly Gly
 165 170 175
 Gly Ala Glu Ile Leu Ser Glu Arg Val Arg Lys Ile Ile Ser Pro Lys
 180 185 190

Lys Met Gln Pro Gly Gly Trp Ile Asn Leu His Lys Leu Ala His Leu
 195 200 205
 Met Gly Phe Arg Thr Thr Ala Thr Met Met Phe Gly His Val Glu Asn
 210 215 220
 Pro Glu Asp Ile Leu Ile His Leu Gln Thr Leu Arg Asp Ala Gln Asp
 225 230 235 240
 Ser Cys Pro Gly Phe Tyr Ser Phe Ile Pro Trp Ser Tyr Lys Pro Gly
 245 250 255
 Asn Thr Ala Leu Arg Arg Asn Val Pro Gln Gln Ala Ser Ile Glu Thr
 260 265 270
 Tyr Tyr Arg Ile Leu Ala Leu Gly Arg Ile Phe Leu Asp Asn Phe Asp
 275 280 285
 His Val Ala Ala Ser Trp Phe Gly Glu Gly Lys Ser Leu Gly Ala Lys
 290 295 300
 Ala Leu His Tyr Gly Ala Asp Asp Phe Gly Gly Val Ile Leu Asp Glu
 305 310 315 320
 Ser Val His Lys Ala Thr Gly Trp Ser Ile Gln Ser Ser Glu Glu Glu
 325 330 335
 Ile Cys Asn Ile Ile Arg Ser Glu Gly Phe Ile Pro Val Glu Arg Asn
 340 345 350
 Thr Phe Tyr Gln His Ile Ser Cys Thr Val Ser Ser Leu
 355 360 365
 <210>985
 <211>438
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>985
 Val Val Ile Met Asp Asn Ser Asp Asn Ser Phe His Thr Leu Glu Thr
 1 5 10 15
 Glu Gln Gly Ser Phe Leu Asn Asp Glu Leu Ala Val Glu Glu Val Ala
 20 25 30
 Ser Thr Glu Ser Thr Glu Ile Ser Asp Ala Thr Leu Cys Phe Ala Asp
 35 40 45
 Glu Ile Gln Glu Leu Pro Ser Pro Glu Lys Lys Val Ala Phe Ile Leu
 50 55 60
 Asn Lys Met Arg Glu Ala Leu Thr Gly Ser Ser Gln Gly Ser Asp Leu
 65 70 75 80
 Arg Leu Phe Trp Asp Leu Arg Lys Gln Cys Leu Pro Leu Phe Asn Glu
 85 90 95
 Ile Glu Asp Thr Ala Lys Arg Ala Asp His Trp Arg Cys Tyr Ile Glu
 100 105 110
 Leu Thr Lys Glu Gly Arg His Leu Lys Gly Leu Gln Asp Glu Glu Gly
 115 120 125
 Ser Phe Val Val Gly Gln Ile Asp Leu Ala Ile Thr Cys Leu Glu Lys
 130 135 140
 Asp Ile Leu Lys Phe Gln Glu Gly Thr Glu Asp Lys Ile Phe Lys Asp
 145 150 155 160
 Arg Glu Asp Asn Phe Leu Glu Ser Gln Ala Leu Asp Lys His Gln Ala
 165 170 175
 Phe Tyr Lys Gln His His Thr Ser Leu Leu Trp Leu Ser Ser Phe Ser
 180 185 190
 Ser Lys Ile Ile Asp Leu Arg Lys Glu Leu Ile Asn Val Gly Met Arg
 195 200 205
 Met Arg Leu Lys Ser Lys Phe Gln Arg Leu Ser Asn Leu Gly Asn
 210 215 220
 Gln Val Phe Pro Lys Arg Lys Glu Leu Ile Glu Lys Val Ser Gln Thr
 225 230 235 240
 Phe Ala Glu Asp Val Asp Ala Phe Val Ala Lys Tyr Phe Ile Gly Ser
 245 250 255
 Asp Lys Glu Thr Leu Lys Lys Thr Val Phe Phe Leu Arg Lys Glu Ile
 260 265 270
 Lys Asn Leu Gln His Ala Ala Lys Arg Leu Phe Val Ser Ser His Val
 275 280 285
 Phe Ala Glu Thr Arg Leu Lys Leu Ser Lys Cys Trp Asp Gln Leu Lys

290 295 300
 Gly Met Glu Lys Glu Ile Arg Gln Glu Gln Gly Arg Leu Arg Val Val
 305 310 315 320
 Ser Ala Glu Asn Ser Lys Glu Val Arg Gln Met Leu Ala Glu Val Ser
 325 330 335
 Ser Leu Leu Ile Glu Gly Asn Asp Leu Ser Lys Val Arg Lys Asp Leu
 340 345 350
 Glu Gly Ile Ser Lys Lys Ile Arg Ala Leu Asp Leu Thr His Asp Asp
 355 360 365
 Val Ile Ser Leu Lys Lys Glu Met Gln Gln Leu Phe Asp Gln Leu Arg
 370 375 380
 Glu Lys Gln Asp Ala Ala Glu His Ser Tyr Gln Glu Gln Leu Ala Lys
 385 390 395 400
 Asp Lys Gln Val Lys Lys Glu Ala Ala Arg Ser Leu Ala Glu Arg Ile
 405 410 415
 Thr Thr Phe Ser Lys Thr Cys Ser Glu Gly Thr Leu Leu Pro Asn Leu
 420 425 430
 Glu Lys Asn Gly Arg His
 435

<210>986

<211>142

<212>PRT

<213>Chlamydia pneumoniae

<400>986

Ala His His Asn Ile Leu Lys Asn Leu Leu Arg Arg Asn Ile Thr Ser
 1 5 10 15
 Glu Ser Arg Glu Glu Trp Gln Thr Leu Lys Glu Leu Leu Gly Lys Met
 20 25 30
 Ser Phe Leu Pro Pro Pro Glu Lys Ile Ser Leu Asp Asn Gln Leu Asn
 35 40 45
 Leu Ala Leu Gln Thr Ile Val Asn Phe Phe Glu Glu Gln Leu Leu Ser
 50 55 60
 Ser Pro Asp Ser Arg Glu Lys Leu Val Asn Met Arg Gln Val Leu Lys
 65 70 75 80
 Gln Arg Arg Glu Arg Arg Gln Glu Leu Lys Asp Lys Leu Glu Gln Asp
 85 90 95
 Lys Lys Leu Leu Gly Ser Ser Gly Leu Asp Phe Asp Arg Ala Met Gln
 100 105 110
 Tyr Ser Ala Leu Val Glu Glu Asp Lys Arg Ala Leu Glu Glu Leu Asp
 115 120 125
 Ala Ser Ile Leu Glu Leu Lys Gln Gln Ile Gln Gln Leu Leu
 130 135 140

<210>987

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>987

Met Asp Ser Phe Cys Phe Asp Leu Leu Lys Val Ala Ala Lys Ala Ile
 1 5 10 15
 Asp Asp Lys Lys Gly Asn Asn Leu Val Val Leu Asp Val Arg Thr Ile
 20 25 30
 Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly Ser Val Asn Val
 35 40 45
 His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu Leu Lys Lys Gln
 50 55 60
 Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp Gly Asn Trp Val
 65 70 75 80
 Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe Val Ser Glu Ile
 85 90 95
 Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp Gly Phe Ile Val
 100 105 110
 Thr Ser Lys Lys Leu Ala Ser
 115

<210>988

<211>424

<212>PRT

<213>Chlamydia pneumoniae

<400>988

Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1 5 10 15
 Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
 20 25 30
 Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
 35 40 45
 Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
 50 55 60
 Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
 65 70 75 80
 Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
 85 90 95
 Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
 100 105 110
 Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
 115 120 125
 Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
 130 135 140
 Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
 145 150 155 160
 Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
 165 170 175
 Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
 180 185 190
 Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
 195 200 205
 Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
 210 215 220
 Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Asp Gly Phe Val
 225 230 235 240
 Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
 245 250 255
 Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
 260 265 270
 Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
 275 280 285
 Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
 290 295 300
 Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
 305 310 315 320
 Asp Leu Ser Glu Val Leu Ala Val Lys Lys Ala Phe Gly Ser His Val
 325 330 335
 Arg Asn Leu Arg Met Asn Ser Thr Lys Ser Leu Ile Gly His Cys Leu
 340 345 350
 Gly Ala Ala Gly Gly Val Glu Ala Val Val Ala Ile Gln Ala Ile Leu
 355 360 365
 Thr Gly Lys Leu His Pro Thr Ile Asn Leu Asp Asn Pro Ile Ala Glu
 370 375 380
 Ile Glu Asp Phe Asp Val Ala Asn Lys Ala Gln Asp Trp Asp Ile
 385 390 395 400
 Asp Val Ala Met Ser Asn Ser Phe Gly Phe Gly Gly His Asn Ser Thr
 405 410 415
 Ile Leu Phe Ser Arg Tyr Val Pro
 420

<210>989

<211>150

<212>PRT

<213>Chlamydia pneumoniae

<400>989

Met Met Lys Thr Lys Tyr Glu Tyr Ser Phe Gly Val Ile Pro Ile Lys

Met	Lys	Tyr	Ser	Leu	Asn	Phe	Lys	Glu	Ile	Lys	Ile	Asp	Asp	Tyr	Glu
1				5					10					15	
Arg	Val	Ile	Glu	Val	Thr	Cys	Ser	Lys	Val	Arg	Leu	His	Ala	Ile	Ile
			20					25					30		
Ala	Ile	His	Gln	Thr	Ala	Val	Gly	Pro	Ala	Leu	Gly	Gly	Val	Arg	Ala
		35					40					45			
Ser	Leu	Tyr	Ser	Ser	Phe	Glu	Asp	Ala	Cys	Thr	Asp	Ala	Leu	Arg	Leu



50					55					60									
Ala	Arg	Gly	Met	Thr	Tyr	Lys	Ala	Ile	Ile	Ser	Asn	Thr	Gly	Thr	Gly				
65					70					75					80				
Gly	Gly	Lys	Ser	Val	Ile	Ile	Leu	Pro	Gln	Asp	Ala	Pro	Ser	Leu	Thr				
				85					90					95					
Glu	Asp	Met	Leu	Arg	Ala	Phe	Gly	Gln	Ala	Val	Asn	Ala	Leu	Glu	Gly				
			100					105					110						
Thr	Tyr	Ile	Cys	Ala	Glu	Asp	Leu	Gly	Val	Ser	Ile	Asn	Asp	Ile	Ser				
		115					120					125							
Ile	Val	Ala	Glu	Glu	Thr	Pro	Tyr	Val	Cys	Gly	Ile	Ala	Asp	Val	Ser				
	130					135					140								
Gly	Asp	Pro	Ser	Ile	Tyr	Thr	Ala	His	Gly	Gly	Phe	Leu	Cys	Ile	Lys				
145				150						155					160				
Glu	Thr	Ala	Lys	Tyr	Leu	Trp	Gly	Ser	Ser	Ser	Leu	Arg	Gly	Lys	Lys				
			165						170					175					
Ile	Ala	Ile	Gln	Gly	Ile	Gly	Ser	Val	Gly	Arg	Arg	Leu	Leu	Gln	Ser				
			180					185					190						
Leu	Phe	Phe	Glu	Gly	Ala	Glu	Leu	Tyr	Val	Ala	Asp	Val	Leu	Glu	Arg				
	195					200					205								
Ala	Val	Gln	Asp	Ala	Ala	Arg	Leu	Tyr	Gly	Ala	Thr	Ile	Val	Pro	Thr				
	210					215					220								
Glu	Glu	Ile	His	Ala	Leu	Glu	Cys	Asp	Ile	Phe	Ser	Pro	Cys	Ala	Arg				
225				230						235					240				
Gly	Asn	Val	Ile	Arg	Lys	Asp	Asn	Leu	Ala	Asp	Leu	Asn	Cys	Lys	Ala				
			245						250					255					
Ile	Val	Gly	Val	Ala	Asn	Asn	Gln	Leu	Glu	Asp	Ser	Ser	Ala	Gly	Met				
			260				265						270						
Met	Leu	His	Glu	Arg	Gly	Ile	Leu	Tyr	Gly	Pro	Asp	Tyr	Leu	Val	Asn				
	275					280					285								
Ala	Gly	Gly	Leu	Leu	Asn	Val	Ala	Ala	Ala	Ile	Glu	Gly	Arg	Val	Tyr				
	290					295					300								
Ala	Pro	Lys	Glu	Val	Leu	Leu	Lys	Val	Glu	Glu	Leu	Pro	Ile	Val	Leu				
305				310						315					320				
Ser	Lys	Leu	Tyr	Asn	Gln	Ser	Lys	Thr	Thr	Gly	Lys	Asp	Leu	Val	Ala				
			325						330					335					
Leu	Ser	Asp	Ser	Phe	Val	Glu	Asp	Lys	Leu	Leu	Ala	Tyr	Thr	Ser					
			340					345					350						

<210>992

<211>325

<212>PRT

<213>Chlamydia pneumoniae

<400>992

Met	His	Ser	Glu	Leu	Pro	Asn	Tyr	Gln	Asn	Ile	Val	Glu	Ser	Val	Val
1				5					10					15	
Thr	Glu	Ile	Thr	Thr	Gln	Leu	Leu	Asn	Tyr	Arg	Ser	Glu	His	Arg	Leu
			20					25					30		
Val	Pro	Phe	Trp	Glu	Lys	Ser	Asp	Gly	Ser	Phe	Ile	Thr	Ala	Ala	Asp
		35					40					45			
Tyr	Gly	Ser	Gln	Tyr	Tyr	Leu	Lys	Gln	Gln	Leu	Ala	Lys	Ala	Phe	Pro
	50					55					60				
Asn	Ile	Pro	Phe	Ile	Gly	Glu	Glu	Thr	Leu	Tyr	Pro	Asp	Gln	Asp	Asn
	65				70					75				80	
Glu	Lys	Ile	Pro	Glu	Ile	Leu	Lys	Phe	Thr	Arg	Leu	Leu	Thr	Ser	Ser
			85						90					95	
Val	Ser	Arg	Asp	Asp	Leu	Ile	Ser	Thr	Leu	Val	Pro	Pro	Pro	Ser	Pro
			100					105					110		
Thr	Ser	Leu	Phe	Trp	Leu	Val	Asp	Pro	Ile	Asp	Gly	Thr	Ala	Gly	Phe
		115					120				125				
Ile	Arg	His	Arg	Ala	Phe	Ala	Val	Ala	Ile	Ser	Leu	Ile	Tyr	Glu	Tyr
	130					135					140				
Arg	Pro	Ile	Leu	Ser	Val	Met	Ala	Cys	Pro	Ala	Tyr	Asn	Gln	Thr	Phe
	145				150					155				160	
Lys	Leu	Tyr	Ser	Ala	Ala	Lys	Gly	His	Gly	Leu	Ser	Ile	Val	His	Ser
				165					170					175	

Gln Asn Leu Asp Arg Arg Phe Val Tyr Ala Asp Arg Lys Gln Thr Lys
 180 185 190
 Gln Phe Cys Glu Ala Ser Leu Ala Ala Leu Asn Gln Gln His His Ala
 195 200 205
 Thr Arg Lys Leu Ser Leu Gly Leu Pro Asn Thr Pro Ser Pro Arg Arg
 210 215 220
 Val Glu Ser Gln Tyr Lys Tyr Ala Leu Val Ala Glu Gly Ala Val Asp
 225 230 235 240
 Phe Phe Ile Arg Tyr Pro Phe Ile Asp Ser Pro Ala Arg Ala Trp Asp
 245 250 255
 His Val Pro Gly Ala Phe Leu Val Glu Glu Ala Gly Gly Arg Val Thr
 260 265 270
 Asp Ala Leu Gly Ala Pro Leu Glu Tyr Arg Lys Glu Ser Leu Val Leu
 275 280 285
 Asn Asn His Ala Val Ile Leu Ala Ser Gly Asp Gln Glu Thr His Glu
 290 295 300
 Thr Thr Leu Ala Ala Leu Gln Asn Gln Leu Asn Val Val Pro Thr Asp
 305 310 315 320
 Lys Leu Ile Ala Leu
 325

<210>993

<211>246

<212>PRT

<213>Chlamydia pneumoniae

<400>993

Gly Glu Leu Met Leu Ile Lys Leu Trp Arg Ala Thr Tyr Glu Gly Met
 1 5 10 15
 Tyr Thr Phe Leu Val Gly Ala Leu Leu Lys Leu Arg Tyr Arg Met Gln
 20 25 30
 Val Glu Gly Trp Asp Thr Leu Asn Ile Asn Pro Lys Gln Gly Cys Leu
 35 40 45
 Phe Leu Ala Asn His Val Ala Glu Val Asp Pro Ile Ile Leu Glu Tyr
 50 55 60
 Leu Phe Trp Ser Arg Phe His Val Arg Pro Met Ala Val Glu Tyr Leu
 65 70 75 80
 Phe His Ser Arg Val Val Gln Trp Phe Leu Asn Ser Val Arg Ser Ile
 85 90 95
 Pro Ile Pro Gln Leu Val Pro Gly Lys Glu Ser Lys Arg Ser Leu Glu
 100 105 110
 Arg Met Asn Val Cys Tyr Glu Glu Ala Ser Arg Ala Leu Asn Arg Gly
 115 120 125
 Glu Ser Leu Leu Leu Tyr Pro Ser Gly Arg Leu Ser Arg Thr Gly Lys
 130 135 140
 Glu Glu Ile Val Asn Gln Tyr Ser Ala Tyr Val Leu Leu His Arg Val
 145 150 155 160
 Met Glu Cys Asn Val Val Leu Val Arg Val Ser Gly Leu Trp Gly Ser
 165 170 175
 Ala Phe Ser Arg Tyr Lys Gln Asn Ser Thr Pro Lys Leu Gly Pro Ala
 180 185 190
 Phe Lys Glu Ala Phe Arg Ala Leu Leu Arg Arg Gly Ile Phe Phe Met
 195 200 205
 Pro Lys Arg Phe Val Lys Ile Thr Leu Cys Gln Val Asp His Leu Phe
 210 215 220
 Leu Lys Gln Phe Pro Thr Lys Gln Asp Leu Asn Thr Phe Leu Ala Ser
 225 230 235 240
 Trp Phe Lys Ser Arg Arg
 245

<210>994

<211>567

<212>PRT

<213>Chlamydia pneumoniae

<400>994

Ile Leu Phe Trp Leu Leu Gly Leu Asn Gln Gly Asp Asp Asn Leu Pro
 1 5 10 15

```

Ile Glu Val Pro Leu Arg Ile Thr Arg Lys Leu Arg Arg Met His Asp
      20      25      30
Gln Arg Asn Arg Gly His Asn Asn His Asn Leu Arg Leu Arg Pro Gly
      35      40      45
Ser Thr Leu Leu Glu Ala Phe Leu Ile Leu Cys Ser Glu His Glu Glu
      50      55      60
Gly Ile Ala Cys Phe Asp Glu His Leu Gly Ser Leu Ser Tyr Arg Glu
      65      70      75      80
Leu Arg Asn Ala Ile Ile Ala Val Ala Ile Lys Val Ser Lys Phe Ser
      85      90      95
Glu Asp Arg Val Gly Val Met Met Pro Ala Ser Ile Gly Ala Phe Ile
      100      105      110
Ala Tyr Phe Gly Ile Leu Leu Ala Gly Lys Thr Pro Val Met Met Asn
      115      120      125
Trp Ser Gln Gly Leu Arg Glu Leu Arg Ala Cys Thr Lys Thr Val Glu
      130      135      140
Val Arg Arg Val Leu Thr Ser Gln Gln Phe Ile Lys His Leu Thr Glu
      145      150      155      160
Val Gln Gly Phe Val Glu Tyr Pro Phe Asp Leu Met Tyr Met Glu Asp
      165      170      175
Val Arg Lys Arg Leu Ser Trp Trp Glu Lys Cys Arg Ile Gly Leu Tyr
      180      185      190
Ser Lys Cys Ser Val Pro Trp Leu Leu Arg Ile Phe Gly Val Ser Gly
      195      200      205
Val Glu Ser Asp Asp Thr Ala Val Ile Leu Phe Thr Ser Gly Thr Glu
      210      215      220
Lys Leu Pro Lys Ala Val Pro Leu Thr His Lys Asn Leu Met Glu Asn
      225      230      235      240
Gln Glu Ala Cys Leu Lys Phe Phe Asp Pro Asn Thr Gln Asp Val Met
      245      250      255
Leu Ala Phe Leu Pro Pro Phe His Ala Tyr Gly Phe Asn Ser Cys Gly
      260      265      270
Leu Phe Pro Leu Leu Met Gly Val His Val Val Phe Ala Ser Asn Pro
      275      280      285
Leu Asn Pro Lys Lys Leu Val Glu Phe Ile Asp Asp Lys Lys Val Thr
      290      295      300
Phe Phe Gly Ser Thr Pro Val Phe Phe Asp Tyr Ile Leu Lys Thr Ala
      305      310      315      320
Lys Lys Gln Asn Ser Cys Leu Glu Ser Leu Arg Leu Val Val Ile Gly
      325      330      335
Gly Asp Ala Leu Lys Asp Thr Leu Tyr Glu Glu Thr Lys Lys Leu Gln
      340      345      350
Pro Gln Ile Ala Leu Tyr Gln Gly Tyr Gly Ala Thr Glu Cys Ser Pro
      355      360      365
Val Ile Ser Ile Thr Thr Lys Glu Ser Pro Arg Lys Ser Glu Cys Val
      370      375      380
Gly Met Pro Ile Glu Gly Met Asp Val Leu Ile Ile Ser Lys Glu Thr
      385      390      395      400
His Ile Pro Val Ser Ser Gly Glu Gln Gly Leu Ile Val Val Arg Gly
      405      410      415
Asn Ser Val Phe Ser Gly Tyr Leu Gly Asn His Glu His Gln Ser Phe
      420      425      430
Val Ser Leu Gly Gly Asp Gln Trp Tyr Leu Thr Gly Asp Leu Gly His
      435      440      445
Ile Gly Pro Ser Gly Asp Leu Phe Leu Glu Gly Arg Leu Ser Arg Phe
      450      455      460
Val Lys Ile Gly Gly Glu Met Val Ser Leu Glu Ala Leu Glu Ser Ile
      465      470      475      480
Leu His Glu His Phe Thr Glu Asn Gln Asn Glu Asp Ala Gly Ser Leu
      485      490      495
Val Val Cys Gly Ile Pro Gly Asp Lys Val Arg Leu Cys Leu Phe Thr
      500      505      510
Thr Leu Ala Thr Thr Ile His Glu Val Asn Asp Ile Leu Lys Ser Ala
      515      520      525

```

Glu Thr Ser Ser Ile Val Lys Ile Ser Tyr Val His Gln Val Glu Ser
 530 535 540
 Ile Pro Ile Leu Gly Ile Gly Lys Pro Asp Tyr Val Ser Leu Asn Ala
 545 550 555 560
 Leu Ala Val Ser Leu Phe Gly
 565
 <210>995
 <211>376
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>995
 Val Cys Lys Glu Ser Phe Leu Thr Thr Ser Asp Val Ile Asp Phe Val
 1 5 10 15
 Thr Asn Asp Phe Leu Gly Phe Ala Arg Ser Pro Thr Ile Tyr Cys Glu
 20 25 30
 Val Ser Lys Arg Phe Gln Ile His Cys Gln Gln Phe Pro His Glu Lys
 35 40 45
 Leu Gly Ile Arg Gly Ser Arg Leu Met Val Gly Pro Ser Ser Val Ile
 50 55 60
 Asp Asp Leu Glu Ser Lys Ile Ala Ser Tyr His Gly Ala Pro Asn Ala
 65 70 75 80
 Phe Ile Val Asn Ser Gly Tyr Met Ala Asn Leu Gly Leu Cys His His
 85 90 95
 Val Ser Arg Ser Thr Asp Val Leu Leu Trp Asp Glu Glu Val His Met
 100 105 110
 Ser Val Val His Ser Leu Ser Ala Ile Ser Gly Gln His His Thr Phe
 115 120 125
 His His Asn Asn Leu Glu His Leu Glu Ser Leu Leu Gln Cys Tyr Arg
 130 135 140
 Ile Ser Ser Lys Gly Arg Ile Phe Ile Phe Val Ser Ser Val Tyr Ser
 145 150 155 160
 Phe Arg Gly Thr Leu Ala Pro Leu Glu Gln Ile Ile Ala Leu Ser Lys
 165 170 175
 Lys Tyr His Ala His Leu Ile Val Asp Glu Ala His Ala Met Gly Ile
 180 185 190
 Phe Gly Asp Asp Gly Lys Gly Leu Cys His Ala Leu Gly Tyr Glu Asn
 195 200 205
 Phe Tyr Ala Val Leu Val Thr Tyr Gly Lys Ala Leu Gly Thr Met Gly
 210 215 220
 Ala Ser Leu Leu Thr Ser Ser Glu Val Lys Tyr Asp Leu Met Gln Asn
 225 230 235 240
 Ser Pro Pro Leu Arg Tyr Ser Thr Ser Leu Ser Pro His Thr Leu Ile
 245 250 255
 Ser Ile Gly Thr Ala Tyr Asp Phe Leu Ala Ser Glu Gly Glu Ile Ala
 260 265 270
 Arg Lys Gln Val Phe Lys Leu Lys Glu His Phe His Glu Cys Phe Asp
 275 280 285
 Ser His Ala Pro Gly Cys Val Gln Pro Ile Phe Leu Pro His Thr Cys
 290 295 300
 Leu Glu Glu Ala Ile Ser Val Leu Glu Thr Thr Gly Ile His Val Gly
 305 310 315 320
 Val Val Ala Phe Ala Lys His Pro Phe Leu Arg Val Asn Leu His Ala
 325 330 335
 Tyr Asn Thr Val Asp Glu Val Asn Leu Leu Ala Gln Val Met Lys Pro
 340 345 350
 Tyr Leu Glu Lys Ser Ser His Arg Val His Ile Asn His Glu Phe His
 355 360 365
 Leu Trp Arg Glu Leu Cys Gln His
 370 375
 <210>996
 <211>758
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>996

Lys Arg Phe Thr Ala Lys Thr Lys Ser Met Gly Tyr Ile Glu Ser Ser
 1 5 10 15
 Thr Phe Arg Leu Tyr Ala Glu Val Ile Val Gly Ser Asn Ile Asn Lys
 20 25 30
 Val Leu Asp Tyr Gly Val Pro Glu Asn Leu Glu His Ile Thr Lys Gly
 35 40 45
 Thr Ala Val Thr Ile Ser Leu Arg Gly Gly Lys Lys Val Gly Val Ile
 50 55 60
 Tyr Gln Ile Lys Thr Thr Thr Gln Cys Lys Lys Ile Leu Pro Ile Leu
 65 70 75 80
 Gly Leu Ser Asp Ser Glu Ile Val Leu Pro Gln Asp Leu Leu Asp Leu
 85 90 95
 Leu Phe Trp Ile Ser Gln Tyr Tyr Phe Ala Pro Leu Gly Lys Thr Leu
 100 105 110
 Lys Leu Phe Leu Pro Ala Ile Ser Ser Asn Val Ile Gln Pro Lys Gln
 115 120 125
 His Tyr Arg Val Val Leu Lys Gln Ser Lys Ala Lys Thr Lys Glu Ile
 130 135 140
 Leu Ala Lys Leu Glu Val Leu His Pro Ser Gln Gly Ala Val Leu Lys
 145 150 155 160
 Ile Leu Leu Gln His Ala Ser Pro Pro Gly Leu Ser Ser Leu Met Glu
 165 170 175
 Thr Ala Lys Val Ser Gln Ser Pro Ile His Ser Leu Glu Lys Leu Gly
 180 185 190
 Ile Leu Asp Ile Val Asp Ala Ala Gln Leu Glu Leu Gln Glu Asp Leu
 195 200 205
 Leu Thr Phe Phe Pro Pro Ala Pro Lys Asp Leu His Pro Glu Gln Gln
 210 215 220
 Ser Ala Ile Asp Lys Ile Phe Ser Ser Leu Lys Thr Ser Gln Phe His
 225 230 235 240
 Thr His Leu Leu Phe Gly Ile Thr Gly Ser Gly Lys Thr Glu Ile Tyr
 245 250 255
 Leu Arg Ala Thr Ser Glu Ala Leu Lys Gln Gly Lys Ser Thr Ile Leu
 260 265 270
 Leu Val Pro Glu Ile Ala Leu Thr Val Gln Thr Val Ser Leu Phe Lys
 275 280 285
 Ala Arg Phe Gly Lys Asp Val Gly Val Leu His His Lys Leu Ser Asp
 290 295 300
 Ser Asp Gln Lys Ser His Val Ala Pro Ser Phe Arg Arg Ser Leu Arg
 305 310 315 320
 Ile Leu Ile Gly Pro Arg Ser Ala Leu Phe Cys Pro Met Lys Asn Leu
 325 330 335
 Gly Leu Ile Ile Val Asp Glu Glu His Asp Pro Ala Tyr Lys Gln Thr
 340 345 350
 Glu Ser Pro Pro Cys Tyr His Ala Arg Asp Val Ala Val Met Arg Gly
 355 360 365
 Lys Leu Ala His Ala Thr Val Leu Gly Ser Ala Thr Pro Ser Leu
 370 375 380
 Glu Ser Tyr Thr Asn Ala Leu Ser Gly Lys Tyr Val Leu Ser Arg Leu
 385 390 395 400
 Ser Ser Arg Ala Ala Ala Ala His Pro Ala Lys Ile Ser Leu Ile Asn
 405 410 415
 Met Asn Leu Glu Arg Glu Lys Ser Lys Thr Lys Ile Leu Phe Ser Gln
 420 425 430
 Pro Val Leu Lys Lys Ile Ala Glu Arg Leu Glu Val Gly Glu Gln Val
 435 440 445
 Leu Ile Phe Phe Asn Arg Arg Gly Tyr His Thr Asn Val Ser Cys Thr
 450 455 460
 Val Cys Lys His Thr Leu Lys Cys Pro His Cys Asp Met Val Leu Thr
 465 470 475 480
 Phe His Lys Tyr Ala Asn Val Leu Leu Cys His Leu Cys Asn Ser Ser
 485 490 495
 Pro Lys Asp Leu Pro Gln Ser Cys Pro Lys Cys Leu Gly Thr Met Thr
 500 505 510

Leu Gln Tyr Arg Gly Ser Gly Thr Glu Lys Ile Glu Lys Ile Leu Gln
 515 520 525
 Gln Ile Phe Pro Gln Ile Arg Thr Ile Arg Ile Asp Ser Asp Thr Thr
 530 535 540
 Lys Phe Lys Gly Ser His Glu Thr Leu Leu Arg Gln Phe Ala Thr Gly
 545 550 555 560
 Lys Ala Asp Val Leu Ile Gly Thr Gln Met Ile Ala Lys Gly Met Asn
 565 570 575
 Phe Ser Ala Val Thr Leu Ala Val Ile Leu Asn Gly Asp Ser Gly Leu
 580 585 590
 Tyr Ile Pro Asp Phe Arg Ala Ser Glu Gln Val Phe Gln Leu Ile Thr
 595 600 605
 Gln Val Ala Gly Arg Ser Gly Arg Ser His Leu Pro Gly Glu Ile Leu
 610 615 620
 Ile Gln Ser Phe Leu Pro Asp His Pro Thr Ile His Ser Ala Met Arg
 625 630 635 640
 Gln Asp Tyr Ser Ala Phe Tyr Ser Gln Glu Ile Thr Gly Arg Glu Leu
 645 650 655
 Cys Glu Tyr Pro Pro Phe Ile Arg Leu Ile Arg Cys Ile Phe Met Gly
 660 665 670
 Lys Cys Pro Lys Gln Thr Trp Glu Glu Ala His Arg Val His Asn Ile
 675 680 685
 Leu Lys Glu Gln Leu Glu Ser Thr Asn Pro Leu Met Pro Val Thr Pro
 690 695 700
 Cys Gly His Phe Lys Ile Lys Asp Thr Phe Arg Tyr Gln Phe Leu Ile
 705 710 715 720
 Lys Ser Ala Tyr Val Ile Pro Val Asn Lys Lys Leu His His Ala Leu
 725 730 735
 Met Leu Ala Lys Leu Ser Pro Lys Val Lys Phe Met Ile Asp Val Asp
 740 745 750
 Pro Met Thr Thr Phe Phe
 755
 <210>997
 <211>230
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>997
 Lys His Trp Leu Phe Met Glu Asn Ser Gln Asn Phe His Asp Thr Leu
 1 5 10 15
 Cys Gln Leu Leu Asp Arg Tyr Ser Glu Glu Leu Tyr Pro Thr Leu Ala
 20 25 30
 Ser Leu Leu Asn Val Thr Leu Pro Asn Thr Ala Ile Ser Ala Ser Val
 35 40 45
 Ser Ser Ile Pro Glu Lys Ala Val Glu Val Pro Asn Ala Glu Pro Gln
 50 55 60
 Pro Ile Thr Pro Pro Pro Thr Asn Leu Ser Gln Glu Lys Thr Lys
 65 70 75 80
 Pro Ser Asp Trp Lys Cys Val Pro Leu His Pro Asp Leu Ser Gln Asn
 85 90 95
 Ala Ile Leu Lys Glu Lys Tyr Pro Ala Leu Lys Asp Cys Ser Leu Pro
 100 105 110
 Ala Pro Lys Ile Pro Cys Ser Ile Phe Val Tyr Glu Glu Asn Asn Glu
 115 120 125
 Glu Val Leu Phe Phe Asn Arg Leu Ala Lys Ile Leu Thr Gln Gln Leu
 130 135 140
 Phe Pro Thr Lys Leu Thr Leu Ile His Ala Lys Thr Asn Ile Phe Val
 145 150 155 160
 Asn Asn Pro Asn Phe Phe Leu Ala Leu Ala Pro Leu Asn Val Ile Arg
 165 170 175
 Tyr Lys Ile Pro Thr Thr Asp Tyr His Gln Ser Leu Thr Gln Asn Gly
 180 185 190
 Cys Ile Phe Leu Pro Leu Tyr Ser Ser Leu Glu Tyr Glu Lys Asp Ser
 195 200 205
 Gln Leu Lys Arg Asn Leu Trp Ala Ile Leu Asn Arg Leu Pro Phe Ala

210 215 220
 Tyr Thr Pro Lys Ser Ser
 225 230
 <210>998
 <211>166
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>998
 His Glu Ile Leu Val Ala Arg Met Cys Phe Cys Arg Leu Ser Ala Ile
 1 5 10 15
 Asp Phe Thr Leu Leu Cys Cys Thr Lys Thr Cys Phe Trp Arg Asn Leu
 20 25 30
 Gln Gln Thr Arg Pro Ile Ala Ala Asn Leu Gln Trp Glu Ser Tyr
 35 40 45
 Ala Glu Ala Leu Glu His Ser Lys Gln Asp His Lys Pro Ile Cys Leu
 50 55 60
 Phe Phe Thr Gly Ser Asp Trp Cys Met Trp Cys Ile Lys Met Gln Asp
 65 70 75 80
 Gln Ile Leu Gln Ser Ser Glu Phe Lys His Phe Ala Gly Val His Leu
 85 90 95
 His Met Val Glu Val Asp Phe Pro Gln Lys Asn His Gln Pro Glu Glu
 100 105 110
 Gln Arg Gln Lys Asn Gln Glu Leu Lys Ala Gln Tyr Lys Val Thr Gly
 115 120 125
 Phe Pro Glu Leu Val Phe Ile Asp Ala Glu Gly Lys Gln Leu Ala Arg
 130 135 140
 Met Gly Phe Glu Pro Gly Gly Gly Ala Ala Tyr Val Ser Lys Val Lys
 145 150 155 160
 Ser Ala Leu Lys Leu Arg
 165
 <210>999
 <211>380
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>999
 Met Ile Pro Ser Pro Thr Pro Ile Asn Phe Arg Asp Asp Thr Ile Leu
 1 5 10 15
 Glu Thr Asp Pro Lys Pro Ser Leu Ile Met Phe Ser Ser Lys Lys Thr
 20 25 30
 Glu Ile Ala Ser Glu Arg Arg Lys Ala His Pro Thr Leu Phe Lys Val
 35 40 45
 Leu Gly Thr Ile Trp Asn Ile Val Lys Phe Ile Ile Ser Ile Ile Leu
 50 55 60
 Phe Leu Pro Leu Ala Leu Leu Trp Val Leu Lys Lys Thr Cys Gln Phe
 65 70 75 80
 Phe Ile Leu Pro Ser Ser Ile Ile Ser Gln Ser Met Ser Lys Thr Ala
 85 90 95
 Val Ala Ile Arg Arg Met Thr Phe Leu Ser His Ile Lys Gln Leu Leu
 100 105 110
 Ser Leu Lys Glu Ile Ser Ala Ala Asp Arg Val Val Ile Gln Tyr Asp
 115 120 125
 Asp Leu Val Val Asp Ser Leu Ala Ile Lys Ile Pro His Ala Leu Pro
 130 135 140
 His Arg Trp Ile Leu Tyr Ser Gln Gly Asn Ser Gly Leu Met Glu Asn
 145 150 155 160
 Leu Phe Asp Arg Gly Asp Ser Ser Leu His Gln Leu Ala Lys Ala Thr
 165 170 175
 Gly Ser Asn Leu Leu Val Phe Asn Tyr Pro Gly Ile Met Ser Ser Lys
 180 185 190
 Gly Glu Ala Lys Arg Glu Asn Leu Val Lys Ser Tyr Gln Ala Cys Val
 195 200 205
 Arg Tyr Leu Arg Asp Glu Glu Thr Gly Pro Lys Ala Asn Gln Ile Ile
 210 215 220
 Ala Phe Gly Tyr Ser Leu Gly Thr Ser Val Gln Ala Ala Ala Leu Asp

225 230 235 240
 Arg Glu Val Thr Asp Gly Ser Asp Gly Thr Ser Trp Ile Val Val Lys
 245 250 255
 Asp Arg Gly Pro Arg Ser Leu Ala Asp Val Ala Asn Gln Ile Cys Lys
 260 265 270
 Pro Ile Ala Ser Ala Ile Ile Lys Leu Val Gly Trp Asn Ile Asp Ser
 275 280 285
 Val Lys Pro Ser Glu Arg Leu Arg Cys Pro Glu Ile Phe Ile Tyr Asn
 290 295 300
 Ser Asn His Asp Gln Glu Leu Ile Ser Asp Gly Leu Phe Glu Arg Glu
 305 310 315 320
 Asn Cys Val Xaa Thr Pro Phe Leu Glu Leu Pro Glu Val Lys Thr Ser
 325 330 335
 Gly Thr Lys Ile Pro Ile Pro Glu Arg Asp Leu Leu His Leu Asn Pro
 340 345 350
 Leu Ser Pro Asn Val Val Asp Arg Leu Ala Ala Val Ile Ser Asn Tyr
 355 360 365
 Leu Asp Ser Glu Asn Arg Lys Ser Gln Gln Pro Asp
 370 375 380
 <210>1000
 <211>377
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1000
 Phe Thr Leu Leu Asn Leu Ser Asn Arg Ser Asp Ile Leu Ser Gly Ile
 1 5 10 15
 Phe Ser Asn Pro His Pro Val Ser Tyr Phe Ser Ser Thr His Ala Lys
 20 25 30
 Gln Leu Ser Asp Phe Ser Lys Lys His Pro Ile Leu Thr Lys Ile Val
 35 40 45
 Thr Ile Val Lys Ile Phe Lys Leu Leu Ile Gly Leu Ile Ile Pro
 50 55 60
 Pro Leu Gly Ile Tyr Trp Leu Cys Gln Leu Val Cys Ser Leu Ala Leu
 65 70 75 80
 Phe Pro Arg Ser Ser Met Leu Tyr Ser Val Leu Lys Thr Cys Phe Lys
 85 90 95
 Lys Tyr Arg Leu Glu Gln Glu Ile Gln Asp Tyr Phe Val Lys Asn Leu
 100 105 110
 Asp Pro Ser Phe Lys Asp Pro Ala Val Ser Glu Ser Lys Arg Ile Thr
 115 120 125
 Ile Gln Gln Asp His Leu Thr Ile Asp Thr Leu Ala Ile His Phe Ser
 130 135 140
 Thr Ala Arg Pro Lys Arg Trp Leu Leu Ile Ser Leu Gly Ser Gly Asp
 145 150 155 160
 Phe Leu Glu Asp Met Ile Gly Leu Lys Asp Ser Leu Phe Leu Ser Trp
 165 170 175
 Lys Glu Leu Ala Lys Leu Leu Gly Ala Asn Ile Leu Ile Tyr Asn Tyr
 180 185 190
 Pro Gly Val Lys Ser Ser Thr Gly Lys Leu Asn Leu Glu Asn Leu Ala
 195 200 205
 Thr Val Ile Ile Tyr Val Gln Ser Thr Tyr Lys Ile Lys Phe Arg Ala
 210 215 220
 Leu Gly Leu Thr Lys Ser Pro Arg Ile Phe Leu Arg Arg Gly Ser
 225 230 235 240
 Pro Val Cys Ser Phe Ala Lys Asn Pro Phe Thr Asn Ser Glu Thr Ser
 245 250 255
 Trp Val Ala Val Lys Asp Arg Ala Pro His Ser Leu Pro Ala Ala Ala
 260 265 270
 Asn Ser Phe Phe Gly Pro Ile Gly Lys Leu Ile Ala Val Leu Ala Arg
 275 280 285
 Trp Lys Met Asp Ala Glu Lys Asn Ser Arg Glu Leu Pro Cys Pro Glu
 290 295 300
 Ile Leu Val Tyr Ser Ala Asp Arg Phe Arg Pro Ser Glu Val Gly Asp
 305 310 315 320

Asp Thr Ala Leu Leu Pro Glu Phe Thr Leu Ala His Ala Ile Lys Arg
 325 330 335
 Thr Pro Phe Ala Arg Ser Lys Lys Phe Ile Gly Glu Val Asn Leu Leu
 340 345 350
 His Ser Ser Pro Leu Lys His Pro Thr Ile Gln Lys Leu Ala Glu Ala
 355 360 365
 Ile Leu Glu Ser Leu Ser Arg Lys Asn
 370 375
 <210>1001
 <211>369
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1001
 Met Ala Pro Ile His Gly Ser Asn Ala Phe Val Glu Asp Ile Leu His
 1 5 10 15
 Ser His Pro Ser Pro Gln Ala Thr Tyr Phe Ser Ser Thr Arg Ala Gln
 20 25 30
 Lys Leu His Glu Phe Lys Asp Arg His Pro Val Leu Thr Arg Ile Ala
 35 40 45
 Ser Val Ile Ile Lys Ile Phe Lys Val Leu Ile Gly Leu Ile Ile Leu
 50 55 60
 Pro Leu Gly Ile Tyr Trp Leu Cys Gln Thr Leu Cys Thr Asn Ser Ile
 65 70 75 80
 Leu Pro Ser Lys Asn Leu Leu Lys Ile Phe Lys Lys Gln Pro Asn Thr
 85 90 95
 Lys Thr Leu Lys Thr Asn Tyr Leu Arg Ala Leu Gln Asp Tyr Ser Ser
 100 105 110
 Lys Asn Arg Val Ala Ser Met Arg Arg Val Pro Ile Leu Gln Asp Asn
 115 120 125
 Val Leu Ile Asp Thr Leu Glu Ile Cys Leu Ser Gln Ala Pro Thr Asn
 130 135 140
 Arg Trp Met Leu Ile Ser Leu Gly Ser Asp Cys Ser Leu Glu Glu Ile
 145 150 155 160
 Ala Cys Lys Glu Ile Phe Asp Ser Trp Gln Arg Phe Ala Lys Leu Ile
 165 170 175
 Gly Ala Asn Ile Leu Val Tyr Asn Tyr Pro Gly Val Met Ser Ser Thr
 180 185 190
 Gly Ser Ser Ser Leu Lys Asp Leu Ala Ser Ala His Asn Ile Cys Thr
 195 200 205
 Arg Tyr Leu Lys Asp Lys Glu Gln Gly Pro Gly Ala Lys Glu Ile Ile
 210 215 220
 Thr Tyr Gly Tyr Ser Leu Gly Gly Leu Ile Gln Ala Glu Ala Leu Arg
 225 230 235 240
 Asp Gln Lys Ile Val Ala Asn Asp Asp Thr Thr Trp Ile Ala Val Lys
 245 250 255
 Asp Arg Cys Pro Leu Phe Ile Ser Pro Glu Gly Phe His Ser Cys Arg
 260 265 270
 Arg Ile Gly Lys Leu Val Ala Arg Leu Phe Gly Trp Gly Thr Lys Ala
 275 280 285
 Val Glu Arg Ser Gln Asp Leu Pro Cys Leu Glu Ile Phe Leu Tyr Pro
 290 295 300
 Thr Asp Ser Leu Arg Arg Ser Thr Val Arg Gln Asn Lys Leu Leu Ala
 305 310 315 320
 Pro Glu Leu Thr Leu Ala His Ala Ile Lys Asn Ser Pro Tyr Val Gln
 325 330 335
 Asn Lys Glu Phe Ile Glu Val Arg Leu Ser Ser Asp Ile Asp Pro Ile
 340 345 350
 Asp Ser Lys Thr Arg Val Ala Leu Ala Thr Pro Ile Leu Lys Lys Leu
 355 360 365
 Ser
 <210>1002
 <211>160
 <212>PRT

<213>Chlamydia pneumoniae

<400>1002

```

Asn Lys Met Ser Glu Leu Ala Pro Cys Ser Thr Gly Leu Gln Met Val
 1          5          10          15
Pro His Thr Gln Val His His Ala Leu Asp Thr Arg Arg Val Ile Leu
          20          25          30
Thr Ile Ala Ala Cys Leu Ser Leu Ile Ala Gly Ile Val Leu Val Gly
          35          40          45
Leu Gly Ala Ala Ala Ile Leu Pro Ser Leu Phe Gly Val Ile Gly Gly
          50          55          60
Met Ile Leu Ile Leu Phe Ser Ser Ile Ala Leu Ile Tyr Leu Tyr Lys
          65          70          75          80
Lys Thr Arg Glu Val Asp Gln Ile Ala Leu Glu Pro Leu Pro Glu Met
          85          90          95
Ile Ser Lys Asp Gln Ser Ile Ile Asp Phe Val Lys Thr Arg Asp Tyr
          100          105          110
Ala Ser Leu Glu Lys Lys Ala Thr Phe Ala Tyr Thr His Thr His Tyr
          115          120          125
Tyr Asp Gly Ser Met Val Phe Tyr Arg Glu Ile Pro Arg Phe Met Leu
          130          135          140
Gly Ser Tyr Leu Ala Leu Arg Lys Asp Met Asp Arg Gln Ala Leu Phe
          145          150          155          160

```

<210>1003

<211>542

<212>PRT

<213>Chlamydia pneumoniae

<400>1003

```

Leu Gly Trp Lys Ser Asp Ile Tyr Thr Asn Ile Leu Glu Glu Arg Met
 1          5          10          15
Thr Ala Arg Ala Glu Tyr Leu Asp His Glu Asp Phe Leu Tyr Arg Ser
          20          25          30
His Lys Leu Gln Glu Leu Ser Glu Leu Gly Val Val Leu Tyr Pro Tyr
          35          40          45
Glu Phe Pro Gly Val Phe Ser Cys Glu Asp Ile Lys Lys Thr Phe Ala
          50          55          60
Ser Gln Glu Leu Gly Asn Ser Glu Ala Ala Met Ser Arg Ser Thr Pro
          65          70          75          80
Arg Val Arg Phe Ala Gly Arg Leu Val Leu Phe Arg Ala Met Gly Lys
          85          90          95
Asn Ala Phe Gly Gln Ile Leu Asp His Asn Gln Thr Ile Gln Val Met
          100          105          110
Phe Asn Arg Glu Phe Thr Ser Val His Gly Leu Ser Glu Asp Ala Glu
          115          120          125
Ile Thr Pro Ile Lys Phe Ile Glu Lys Lys Leu Asp Leu Gly Asp Ile
          130          135          140
Leu Gly Ile Asp Gly Tyr Leu Phe Phe Thr His Ser Gly Glu Leu Thr
          145          150          155          160
Val Leu Val Glu Thr Val Thr Leu Leu Cys Lys Ser Leu Leu Ser Leu
          165          170          175
Pro Asp Lys His Ala Gly Leu Ser Asp Lys Glu Val Arg Tyr Arg Lys
          180          185          190
Arg Trp Leu Asp Leu Ile Ser Ser Arg Glu Val Ser Asp Thr Phe Val
          195          200          205
Lys Arg Ser Tyr Ile Ile Lys Leu Ile Arg Asn Tyr Met Asp Ala His
          210          215          220
Gly Phe Leu Glu Val Glu Thr Pro Ile Leu Gln Asn Ile Tyr Gly Gly
          225          230          235          240
Ala Glu Ala Lys Pro Phe Thr Thr Thr Met Glu Ala Leu His Ser Glu
          245          250          255
Met Phe Leu Arg Ile Ser Leu Glu Ile Ala Leu Lys Lys Ile Leu Val
          260          265          270
Gly Gly Ala Pro Arg Ile Tyr Glu Leu Gly Lys Val Phe Arg Asn Glu
          275          280          285
Gly Ile Asp Arg Thr His Asn Pro Glu Phe Thr Met Ile Glu Ala Tyr

```

290 295 300
 Ala Ala Tyr Met Asp Tyr Lys Glu Val Met Val Phe Val Glu Asn Leu
 305 310 315 320
 Val Glu His Leu Val Arg Ala Val Asn His Asp Asn Thr Ser Leu Val
 325 330 335
 Tyr Ser Tyr Trp Lys His Gly Pro Gln Glu Val Asp Phe Lys Ala Pro
 340 345 350
 Trp Ile Arg Met Thr Met Lys Glu Ser Ile Ala Thr Tyr Ala Gly Ile
 355 360 365
 Asp Val Asp Val His Ser Asp Gln Lys Leu Lys Glu Ile Leu Lys Lys
 370 375 380
 Lys Thr Thr Phe Pro Glu Thr Ala Phe Ala Thr Ala Ser Arg Gly Met
 385 390 395 400
 Leu Ile Ala Ala Leu Phe Asp Glu Leu Val Ser Asp Asn Leu Ile Ala
 405 410 415
 Pro His His Ile Thr Asp His Pro Val Glu Thr Thr Pro Leu Cys Lys
 420 425 430
 Thr Leu Arg Ser Gly Asp Thr Ala Phe Val Glu Arg Phe Glu Ser Phe
 435 440 445
 Cys Leu Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro
 450 455 460
 Ile Arg Gln Arg Glu Leu Glu Gln Gln His Thr Lys Lys Glu Leu
 465 470 475 480
 Leu Pro Asp Ser Glu Cys His Pro Ile Asp Glu Glu Phe Leu Glu Ala
 485 490 495
 Leu Cys Gln Gly Met Pro Pro Ala Gly Gly Phe Gly Ile Gly Val Asp
 500 505 510
 Arg Leu Val Met Ile Leu Thr Asn Ala Ala Ser Ile Arg Asp Val Leu
 515 520 525
 Tyr Phe Pro Val Met Arg Arg Phe Asp Ala Glu Lys Thr Asn
 530 535 540

<210>1004

<211>308

<212>PRT

<213>Chlamydia pneumoniae

<400>1004

Val Ala Tyr Ala Ala Pro Glu Phe Leu Leu Met Ser Met Thr Lys
 1 5 10 15
 Lys Thr Gln Val Ile Leu Tyr Cys Gly Lys His Thr Ile Gln Asn Val
 20 25 30
 Met Ala Ser Phe Ile Gly Lys Val Leu Ser Gly Ile Gly Arg Pro Gly
 35 40 45
 Trp His Leu Glu Cys Ser Ile Met Ala Met Glu Leu Leu Gly Asp Ser
 50 55 60
 Leu Asp Ile His Ala Gly Gly Val Asp Asn Ile Phe Pro His His Glu
 65 70 75 80
 Asn Glu Ile Ala Gln Ser Glu Ala Leu Ser Gly Lys Pro Phe Ala Arg
 85 90 95
 Tyr Trp Leu His Ser Glu His Leu Leu Ile Asp Gly Lys Lys Met Ser
 100 105 110
 Lys Ser Leu Gly Asn Phe Leu Thr Leu Arg Asp Leu Leu His Gln Glu
 115 120 125
 Phe Thr Gly Gln Glu Val Arg Tyr Met Leu Leu Gln Ser His Tyr Arg
 130 135 140
 Thr Gln Leu Asn Phe Thr Glu Glu Ala Leu Leu Ala Cys Arg His Ala
 145 150 155 160
 Leu Arg Arg Leu Lys Asp Phe Val Ser Arg Leu Glu Gly Val Asp Leu
 165 170 175
 Pro Gly Glu Ser Pro Leu Pro Arg Thr Leu Asp Ser Ser Ser Gln Phe
 180 185 190
 Ile Glu Ala Phe Ser Arg Ala Leu Ala Asn Asp Leu Asn Val Ser Thr
 195 200 205
 Gly Phe Ala Ser Leu Phe Asp Phe Val His Glu Ile Asn Thr Leu Ile
 210 215 220

Asp Gln Gly His Phe Ser Lys Ala Asp Ser Leu Tyr Ile Leu Asp Thr
 225 230 235 240
 Leu Lys Lys Val Asp Thr Val Leu Gly Val Leu Pro Leu Thr Thr Ser
 245 250 255
 Val Cys Ile Pro Glu Thr Val Met Gln Leu Val Ala Glu Arg Glu Glu
 260 265 270
 Ala Arg Lys Thr Lys Asn Trp Ala Met Ala Asp Thr Leu Arg Asp Glu
 275 280 285
 Ile Leu Ala Ala Gly Phe Leu Val Glu Asp Ser Lys Ser Gly Pro Lys
 290 295 300
 Val Lys Pro Leu
 305

<210>1005

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>1005

Gly Leu Tyr Phe Tyr Asn Thr Ala Ser Gln Lys Lys Glu Leu Phe Phe
 1 5 10 15
 Pro Asn His Thr Pro Val Arg Leu Tyr Thr Cys Gly Pro Thr Val Tyr
 20 25 30
 Asp Tyr Ala His Ile Gly Asn Phe Arg Thr Tyr Val Phe Glu Asp Ile
 35 40 45
 Leu Lys Arg Thr Leu Val Phe Gly Tyr Ser Val Thr His Val Met
 50 55 60
 Asn Ile Thr Asp Val Glu Asp Lys Thr Ile Ala Gly Ala Ser Lys Lys
 65 70 75 80
 Asn Ile Pro Leu Gln Glu Tyr Thr Gln Pro Tyr Thr Glu Ala Phe Phe
 85 90 95
 Glu Asp Leu Asp Thr Leu Asn Ile Ala Arg Ala Asp Phe Tyr Pro His
 100 105 110
 Ala Thr His Tyr Ile Pro Gln Met Ile Gln Ala Ile Thr Lys Leu Leu
 115 120 125
 Glu Gln Gly Ile Ala Tyr Ile Gly Gln Asp Ala Ser Val Tyr Phe Ser
 130 135 140
 Leu Asn Arg Phe Pro Asn Tyr Gly Lys Leu Ser His Leu Asp Leu Ser
 145 150 155 160
 Ser Leu Arg Cys Cys Ser Arg Ile Ser Ala Asp Glu Tyr Asp Lys Glu
 165 170 175
 Asn Pro Ser Asp Phe Val Leu Trp Lys Ala Tyr Asn Pro Glu Arg Asp
 180 185 190
 Gly Val Ile Tyr Trp Glu Ser Pro Phe Gly Asn Arg Lys Thr Trp Met
 195 200 205
 Ala Phe Arg Met Phe Asp Tyr Gly Asp Gly Thr Ser Trp Arg Phe Phe
 210 215 220
 Gly Tyr Pro Cys Gly Arg Cys Arg
 225 230

<210>1006

<211>242

<212>PRT

<213>Chlamydia pneumoniae

<400>1006

Thr Ala Val Glu Asn Ile Arg Gln Gln Asn Leu Ala Leu Lys Ser Lys
 1 5 10 15
 Phe Lys Ile Asn Glu Leu Pro Cys Met Ile Leu Leu Ser His Glu Glu
 20 25 30
 Arg Glu Ile Tyr Arg Ile Gly Ser Phe Gly Asn Glu Thr Gly Ser Asn
 35 40 45
 Leu Gly Asp Ser Leu Cys His Ile Val Glu Ser Asp Ser Leu Leu Arg
 50 55 60
 Arg Ala Phe Pro Met Met Thr Ser Leu Ser Leu Ser Glu Leu Gln Arg
 65 70 75 80
 Tyr Tyr Arg Leu Ala Glu Glu Leu Ser His Lys Glu Phe Leu Lys His
 85 90 95

Ala Leu Glu Leu Gly Val Arg Ser Asp Asp Tyr Phe Phe Leu Ser Glu
 100 105 110
 Lys Phe Arg Leu Leu Val Glu Val Gly Lys Met Asp Ser Glu Glu Cys
 115 120 125
 Gln Arg Ile Lys Lys Arg Leu Leu Asn Lys Asp Pro Lys Asn Glu Lys
 130 135 140
 Gln Thr His Phe Thr Val Ala Leu Ile Glu Phe Gln Glu Leu Ala Lys
 145 150 155 160
 Arg Ser Arg Ala Gly Val Arg Gln Asp Ala Ser Gln Val Ile Ala Pro
 165 170 175
 Leu Glu Ser Tyr Ile Ser Gln Phe Gly Gln Gln Asp Lys Asp Asn Leu
 180 185 190
 Trp Arg Val Glu Met Met Ile Ala Gln Phe Tyr Leu Asp Ser Asp Gln
 195 200 205
 Trp His His Ala Leu Gln His Ala Glu Val Ala Phe Glu Ala Ala Pro
 210 215 220
 Asn Glu Val Arg Ser His Ile Ser Arg Ser Leu Glu Tyr Ile Arg His
 225 230 235 240
 Gln Ser

<210>1007

<211>139

<212>PRT

<213>Chlamydia pneumoniae

<400>1007

Val His Pro Leu Thr Leu Pro Lys Gln Ser Arg Val Leu Lys Arg Lys
 1 5 10 15
 Gln Phe Leu Tyr Ile Thr Arg Ser Gly Phe Cys Cys Arg Gly Ser Gln
 20 25 30
 Ala Thr Phe Tyr Val Val Pro Ser Arg His Pro Gly Thr Cys Arg Met
 35 40 45
 Gly Ile Thr Val Ser Lys Lys Phe Gly Lys Ala His Glu Arg Xaa Ser
 50 55 60
 Phe Lys Arg Val Val Arg Glu Val Phe Arg His Val Arg His Gln Leu
 65 70 75 80
 Pro Asn Cys Gln Ile Val Val Phe Pro Lys Gly His Lys Gln Arg Pro
 85 90 95
 Val Phe Ser Lys Leu Leu Gln Asp Phe Ile Asn Gln Ile Pro Glu Gly
 100 105 110
 Leu His Arg Leu Gly Lys Thr Lys Ala Thr Thr Gly Gly Glu Cys Thr
 115 120 125
 Pro Lys Ser Glu Lys Cys Val Thr Ala Pro Arg
 130 135

<210>1008

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1008

Met Ala Lys Lys Ser Ser Val Ala Arg Glu Ala Lys Arg Arg Arg Leu
 1 5 10 15
 Val Glu Ala Asn Phe Lys Lys Arg Ser Asp Leu Arg Lys Ile Val Lys
 20 25 30
 Ser Leu Ser Val Ser Glu Glu Glu Lys Glu Asn Ala Arg Ile Ser Leu
 35 40 45
 Asn Lys Met Lys Arg Asp Thr Ser Pro Thr Arg Leu His Asn Arg Cys
 50 55 60
 Leu Leu Thr Gly Arg Pro Arg Gly Tyr Leu Arg Lys Phe Ala Ile Ser
 65 70 75 80
 Arg Ile Cys Phe Arg Gln Met Ala Ser Met Gly Glu Ile Pro Gly Val
 85 90 95
 Ile Lys Ala Ser Trp
 100

<210>1009

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>1009

Gln Thr Ile Asn Leu Ser Gly Thr Leu Arg Thr Met Leu Pro Ile Ser
 1 5 10 15
 Ile Leu Leu Phe Tyr Val Ile Leu Gly Cys Leu Ser Ala Tyr Ile Ala
 20 25 30
 Asp Lys Lys Lys Arg Asn Val Ile Gly Trp Phe Phe Ala Gly Ala Phe
 35 40 45
 Phe Gly Phe Ile Gly Leu Val Val Leu Leu Leu Leu Pro Ser Arg Arg
 50 55 60
 Asn Ala Leu Glu Lys Pro Gln Asn Asp Pro Phe Asp Asn Ser Asp Leu
 65 70 75 80
 Phe Asp Asp Leu Lys Lys Ser Leu Ala Gly Asn Asp Glu Ile Pro Ser
 85 90 95
 Ser Gly Asp Leu Gln Glu Ile Val Ile Asp Thr Glu Lys Trp Phe Tyr
 100 105 110
 Leu Asn Lys Asp Arg Glu Asn Val Gly Pro Ile Ser Phe Glu Glu Leu
 115 120 125
 Val Val Leu Leu Lys Gly Lys Thr Tyr Pro Glu Glu Ile Trp Val Trp
 130 135 140
 Lys Lys Gly Met Lys Asp Trp Gln Arg Val Lys Asp Val Pro Ser Leu
 145 150 155 160
 Gln Gln Ala Leu Lys Glu Ala Ser Lys
 165

<210>1010

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>1010

His Ile Asn Arg Trp Thr Ile Arg Leu Ser Leu Thr Leu Ile Ile Ser
 1 5 10 15
 Thr Val Leu Tyr Phe Phe Ser Glu Glu Ile Glu Leu Ile Gly Gly Gly
 20 25 30
 Lys Met Glu Lys Gln Asn Leu Lys Leu Asp Val Lys Glu Ile Glu Phe
 35 40 45
 Pro Glu Thr Val Phe Ser Arg Asp Ile Glu Thr Arg Val Ile Gln Val
 50 55 60
 Ile Ile Leu His Cys Leu Ala Lys Ile Asn Gly Val Ser Leu Leu Gly
 65 70 75 80
 Gly Asn Leu Ile Asp Ala Leu Phe Gly Arg Asp Ile Glu Arg Met Lys
 85 90 95
 Gly Ile Tyr Val Glu Gln Asp Ser Lys Asn His Leu Val Lys Val Arg
 100 105 110
 Val Glu Val Asn Val Asp Tyr Gly Val Ser Ile Pro Glu Lys Thr Glu
 115 120 125
 Glu Ile Gln Gly Cys Ile Val Ser Glu Ile Ser Glu Tyr Thr Gly Leu
 130 135 140
 His Val Ala Ala Val His Val Ile Ile Lys Gly Leu Thr Gln Pro Lys
 145 150 155 160
 Asp Arg Ile Asp Glu Glu Ile Glu Glu Glu Val Ser Val Gln Asp Leu
 165 170 175
 Pro Ser Pro Glu Asp Phe Leu Leu Glu Asn Ser Glu Gly
 180 185

<210>1011

<211>603

<212>PRT

<213>Chlamydia pneumoniae

<400>1011

Met Arg Ile Glu Asp Phe Ser Leu Lys Leu Ile Pro Ser Ser Pro Gly
 1 5 10 15
 Val Tyr Leu Met Lys Asp Val His Asp Gln Val Leu Tyr Ile Gly Lys
 20 25 30
 Ala Lys Asn Leu Lys Asn Arg Leu Ala Ser Tyr Phe His Glu Lys Gly

1037

1038

His Tyr Lys Glu Leu Thr Thr Leu Glu Asp His Cys Pro His Val Glu
 420 425 430
 Asn Phe His Ala Gly Val Lys Asp Lys Ala Gly Gln Pro Val Phe Leu
 435 440 445
 Tyr Glu Ile Leu Lys Asp Ile His Lys Lys Val Ser Ala Phe Met Ser
 450 455 460
 Pro Gly Leu Leu Ala Phe Pro Phe Val Trp Tyr Arg Glu Leu Ser Arg
 465 470 475 480
 Ser

<210>1013

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1013

Val Met Thr Glu Lys Lys Pro Thr Pro Met Met Glu Gln Trp His Gln
 1 5 10 15
 Cys Lys Glu Lys Ala Gly Asp Ser Val Leu Leu Phe Arg Met Gly Asp
 20 25 30
 Phe Tyr Glu Ala Phe Tyr Asp Asp Ala Val Leu Leu Ser Gln His Leu
 35 40 45
 Glu Leu Thr Leu Thr Gln Arg Gln Gly Ile Pro Met Ser Gly Ile Pro
 50 55 60
 Val Ser Thr Val Asp Thr Tyr Val Asp Arg Leu Ile Gly Lys Gly Phe
 65 70 75 80
 Lys Val Ala Val Ala Glu Gln Phe Gly Glu Pro Ala Lys Glu Lys Glu
 85 90 95
 Ser Lys Lys Ile Gly Pro Met Ala Arg Asp Ile Gln Arg Phe Val Thr
 100 105 110
 Pro Gly Thr Leu Leu Ser Ser Thr Leu Leu Gln Glu Lys Phe Asn Asn
 115 120 125
 Xaa Ile Val Ala Ile Thr Arg Ile Gly Ser Leu Phe Gly Phe Ala Cys
 130 135 140
 Leu Asp Leu Ser Thr Gly Ser Phe Phe Ile Glu Glu Cys Glu Asn Thr
 145 150 155 160
 Lys Glu Leu Val Asp Glu Ile Cys Arg Leu Ala Pro Ser Glu Val Leu
 165 170 175
 Ser Cys Asn Lys Phe Tyr Asn Lys Glu Thr Ala Ile Val Met Gln Leu
 180 185 190
 Gln Gln His Leu Lys Leu Thr Leu Ser Thr Tyr Ala Asp Trp Ala Phe
 195 200 205
 Glu His Lys Phe Ala Ser Gln Lys Leu Thr Thr His Phe Gln Val Ala
 210 215 220
 Ser Leu Asp Gly Phe Gly Leu Lys Gly Leu Val Pro Ala Ile Asn Ala
 225 230 235 240
 Ala Gly Gly Leu Leu Ser Tyr Ile Gln Asp Lys Leu Leu Leu Pro Thr
 245 250 255
 Lys His Ile Ala Ile Pro Gln Thr Arg Gly Lys Gln Gln Lys Leu Leu
 260 265 270
 Ile Asp Thr Ala Ser Gln Val Asn Leu Glu Leu Leu Ala Pro Leu Asn
 275 280 285
 Asp Pro Gln Gly Lys Asn Ser Leu Leu Arg Ile Met Asp His Thr Ser
 290 295 300
 Thr Pro Met Gly Gly Arg Leu Leu Arg Gln Ile Leu Ile Ser Pro Phe
 305 310 315 320
 Tyr Asn Pro Lys Glu Ile Leu Val Arg Gln Asp Ala Val Glu Phe Phe
 325 330 335
 Phe Gly Lys

<210>1014

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1014

Leu Arg Thr Ala Met Tyr Thr Glu Glu Ser Leu Asp Asn Leu Arg His
 1 5 10 15
 Ser Ile Asp Ile Val Asp Val Leu Ser Glu His Ile His Leu Lys Arg
 20 25 30
 Ser Gly Ala Thr Tyr Lys Ala Cys Cys Pro Phe His Thr Glu Lys Thr
 35 40 45
 Pro Ser Phe Ile Val Asn Pro Ala Gly Ala His Tyr His Cys Phe Gly
 50 55 60
 Cys Gly Ala His Gly Asp Ala Ile Gly Phe Leu Met Gln His Leu Gly
 65 70 75 80
 Tyr Ser Phe Thr Glu Ala Ile Leu Val Leu Ser Lys Lys Phe Gln Val
 85 90 95
 Asp Leu Val Leu Gln Pro Lys Asp Ser Gly Tyr Thr Pro Pro Gln Gly
 100 105 110
 Leu Lys Glu Glu Leu Arg His Ile Asn Ser Glu Ala Glu Thr Phe Phe
 115 120 125
 Arg Tyr Cys Leu Tyr His Leu Pro Glu Ala Arg His Ala Leu Gln Tyr
 130 135 140
 Leu Tyr His Arg Gly Phe Ser Pro Asp Thr Ile Asp Arg Phe His Leu
 145 150 155 160
 Gly Tyr Gly Pro Glu Gln Ser Leu Phe Leu Gln Ala Met Glu Glu Arg
 165 170 175
 Lys Ile Ser Gln Glu Gln Leu His Thr Ala Gly Phe Phe Gly Asn Lys
 180 185 190
 Trp Phe Leu Phe Ala Arg Arg Ile Ser Phe Leu Ser Thr Met Arg
 195 200 205

<210>1015

<211>402

<212>PRT

<213>Chlamydia pneumoniae

<400>1015

Met Val Phe Val Cys Thr Lys Asn Leu Phe Pro Val His Asp Ala Leu
 1 5 10 15
 Gly His Thr Ile Gly Phe Ser Ala Arg Lys Phe Leu Glu Asn Ser Gln
 20 25 30
 Gly Gly Lys Tyr Val Asn Thr Pro Glu Thr Pro Ile Phe Lys Lys Ser
 35 40 45
 Arg Ile Leu Phe Gly Leu Asn Phe Ser Arg Arg Arg Ile Ala Lys Glu
 50 55 60
 Xaa Lys Val Ile Leu Val Glu Gly Gln Ala Asp Cys Leu Gln Met Ile
 65 70 75 80
 Asp Ser Gly Phe Asn Cys Thr Val Ala Ala Gln Gly Thr Ala Phe Thr
 85 90 95
 Glu Glu His Val Lys Glu Leu Ser Lys Leu Gly Val Leu Lys Val Phe
 100 105 110
 Leu Leu Phe Asp Ser Asp Glu Ala Gly Asn Lys Ala Ala Leu Arg Val
 115 120 125
 Gly Asp Leu Cys Gln Thr Ala Gln Met Ser Val Phe Val Cys Lys Leu
 130 135 140
 Pro Gln Gly His Asp Pro Asp Ser Phe Leu Met Gln Arg Gly Ser Ser
 145 150 155 160
 Gly Leu Ile Ala Leu Leu Glu Gln Ser Gln Asp Tyr Leu Thr Phe Leu
 165 170 175
 Ile Ser Glu Lys Met Ser Ser Tyr Pro Lys Phe Gly Pro Arg Glu Lys
 180 185 190
 Ala Leu Leu Val Glu Glu Ala Ile Arg Gln Ile Lys His Trp Gly Ser
 195 200 205
 Pro Ile Leu Val Tyr Glu His Leu Lys Gln Leu Ala Ser Leu Met Met
 210 215 220
 Val Pro Glu Asp Met Val Leu Ser Leu Ala Asn Pro Gln Val Thr Ala
 225 230 235 240
 Glu Pro Gln Asn Ile Pro Ile Lys Gln Lys Val Pro Lys Ile His Pro
 245 250 255
 His Ile Val Met Glu Thr Asp Ile Leu Arg Cys Met Leu Phe Cys Gly

260 265 270
 Ser Asn Thr Lys Ile Leu Tyr Thr Ala Gln Phe Tyr Phe Val Pro Glu
 275 280 285
 Asp Phe Lys His Pro Glu Cys Arg Lys Leu Phe Ala Phe Met Ile Ser
 290 295 300
 Tyr Tyr Glu Lys Tyr Arg Lys Asn Val Pro Phe Asp Glu Ala Cys Gln
 305 310 315 320
 Val Leu Ser Asp Ser Gln Ile Leu Gln Leu Thr Lys Arg Arg Leu
 325 330 335
 Asn Thr Glu Ala Leu Asp Thr Ile Phe Val Gln Ser Leu Gln Lys Met
 340 345 350
 Ala Asp Arg Arg Trp Arg Glu Gln Cys Lys Pro Leu Ser Leu Asn Gln
 355 360 365
 Asn Ile Gln Asp Lys Lys Leu Glu Ile Leu Glu Asp Tyr Val Gln Leu
 370 375 380
 Arg Lys Asp Arg Thr Ile Thr Leu Leu Asp Pro Glu Ser Glu Leu
 385 390 395 400
 Ile Pro

<210>1016

<211>120

<212>PRT

<213>Chlamydia pneumoniae

<400>1016

Ile Lys Ile Met Met His Arg Tyr Phe Ile Pro Leu Leu Ala Leu Leu
 1 5 10 15
 Ile Phe Ser Pro Ser Leu Val Arg Ala Glu Leu Gln Pro Ser Glu Asn
 20 25 30
 Arg Lys Gly Gly Trp Pro Thr Gln Leu Ser Cys Ala Glu Gly Ser Gln
 35 40 45
 Leu Phe Cys Lys Phe Glu Ala Tyr Asn Asn Ala Ile Glu Glu Gly
 50 55 60
 Lys Pro Gly Ile Leu Val Phe Phe Ser Glu Arg Pro Thr Pro Glu Phe
 65 70 75 80
 Ala Asp Leu Thr Asn Gly Ser Phe Ser Leu Ser Thr Pro Ile Ala Lys
 85 90 95
 Gly Phe Asn Val Val Val Leu Cys Pro Gly Leu Ile Ser Pro Leu Asp
 100 105 110
 Phe Phe His Gln Asn Gly Ile Leu
 115 120

<210>1017

<211>220

<212>PRT

<213>Chlamydia pneumoniae

<400>1017

Ser Ile Phe Lys Asn Lys Ile Leu Pro Ser Tyr Phe Gly His Asn Phe
 1 5 10 15
 Asp Gln Leu Arg Arg His Tyr Met Arg Ile Ala Leu Ser Leu Leu Ser
 20 25 30
 Leu Leu Met Ile Phe Pro Ile Phe Gly Glu Glu Ser Arg Pro Gly Ser
 35 40 45
 Glu Asp Gly Asn Ser Asn Thr Gln Glu Ile Val Gly Ser Gln Asp Thr
 50 55 60
 Gln Val Cys Leu Tyr His Ser Tyr Glu Gln Gly Leu Gln Ala Ser Arg
 65 70 75 80
 Ile Glu Gly Lys Pro Leu Val Ile Val Val Leu Cys Asn Ser Gly Asp
 85 90 95
 Asp Gly Gln Ala Cys Thr Ile Gly Leu Ser Glu Thr Cys Glu Glu Val
 100 105 110
 Leu Ser Val Leu Ser Gly Ser Ile Phe Ser Glu Leu Ala Asn Phe Val
 115 120 125
 Val Leu Val Pro Ser Gly Val Asn Pro Leu Ile Tyr Pro Pro Ile Glu
 130 135 140
 Asp Pro Ile Leu Ala Glu Ile Val Lys Phe Lys Glu Leu Phe Lys Asp

```

145          150          155          160
Glu Ser Phe Pro Thr Gly Leu Ser Ile Ile Val Val Gly Val Thr Pro
          165          170          175
Glu Gly Pro Gly Asp Ile Ile Glu Val Ser Pro Val Ser Leu Thr Val
          180          185          190
Glu Glu Glu Glu Thr Leu Pro Ser Glu Gln Thr Thr Glu Val Glu Ser
          195          200          205
Thr Ser Glu Leu Gln Ser Glu Asp Pro Ala Ile Ala
          210          215          220
<210>1018
<211>1014
<212>PRT
<213>Chlamydia pneumoniae
<400>1018
Leu Glu Ser Phe Val Ser Glu His Pro Leu Thr Leu Gln Ser Met Ile
1          5          10          15
Ala Thr Ile Leu Arg Phe Trp Ser Glu Gln Gly Cys Val Ile His Gln
          20          25          30
Gly Tyr Asp Leu Glu Val Gly Ala Gly Thr Phe Asn Pro Ala Thr Phe
          35          40          45
Leu Arg Ala Leu Gly Pro Glu Pro Tyr Lys Ala Ala Tyr Val Glu Pro
          50          55          60
Ser Arg Arg Pro Gln Asp Gly Arg Tyr Gly Val His Pro Asn Arg Leu
          65          70          75          80
Gln Asn Tyr His Gln Leu Gln Val Ile Leu Lys Pro Val Pro Glu Asn
          85          90          95
Phe Leu Ser Leu Tyr Thr Glu Ser Leu Arg Ala Ile Gly Leu Asp Leu
          100          105          110
Arg Asp His Asp Ile Arg Phe Ile His Asp Asp Trp Glu Asn Pro Thr
          115          120          125
Ile Gly Ala Trp Gly Leu Gly Trp Glu Val Trp Leu Asn Gly Met Glu
          130          135          140
Ile Thr Gln Leu Thr Tyr Phe Gln Ala Ile Gly Ser Lys Pro Leu Asp
          145          150          155          160
Thr Ile Ser Gly Glu Ile Thr Tyr Gly Ile Glu Arg Ile Ala Met Tyr
          165          170          175
Leu Gln Lys Lys Thr Ser Ile Tyr Asp Val Leu Trp Asn Asp Thr Leu
          180          185          190
Thr Tyr Gly Gln Ile Thr Gln Ala Ser Glu Lys Ala Trp Ser Glu Tyr
          195          200          205
Asn Phe Asp Tyr Ala Asn Thr Glu Met Trp Phe Lys His Phe Glu Asp
          210          215          220
Phe Ala Glu Glu Ala Leu Arg Thr Leu Lys Asn Gly Leu Ser Val Pro
          225          230          235          240
Ala Tyr Asp Phe Val Ile Lys Ala Ser His Ala Phe Asn Ile Leu Asp
          245          250          255
Ala Arg Gly Thr Ile Ser Val Thr Glu Arg Thr Arg Tyr Ile Ala Arg
          260          265          270
Ile Arg Gln Leu Thr Arg Leu Val Ala Asp Ser Tyr Val Glu Trp Arg
          275          280          285
Ala Ser Leu Asn Tyr Pro Leu Leu Ser Leu Ser Ser Thr Ser Glu Pro
          290          295          300
Lys Glu Thr Ser Glu Ser Val Val Pro Met Ile Ser Ser Thr Glu Asp
          305          310          315          320
Leu Leu Leu Glu Ile Gly Ser Glu Glu Leu Pro Ala Thr Phe Val Pro
          325          330          335
Ile Gly Ile Gln Gln Leu Glu Ser Leu Ala Arg Gln Val Leu Thr Asp
          340          345          350
His Asn Ile Val Tyr Glu Gly Leu Glu Val Leu Gly Ser Pro Arg Arg
          355          360          365
Leu Ala Leu Leu Val Lys Asn Val Ala Pro Glu Val Val Gln Lys Ala
          370          375          380
Phe Glu Lys Lys Gly Pro Met Leu Thr Ser Leu Phe Ser Pro Asp Gly
          385          390          395          400

```

Asp Val Ser Pro Gln Gly Gln Gln Phe Phe Ala Ser Gln Gly Val Asp
 405 410 415
 Ile Ser His Tyr Gln Asp Leu Ser Arg His Ala Ser Leu Ala Ile Arg
 420 425 430
 Thr Val Asn Gly Ser Glu Tyr Leu Phe Leu Leu His Pro Glu Ile Arg
 435 440 445
 Leu Arg Thr Ala Asp Ile Leu Met Gln Glu Leu Pro Leu Leu Ile Gln
 450 455 460
 Arg Met Lys Phe Pro Lys Lys Met Val Trp Asp Asn Ser Gly Val Glu
 465 470 475 480
 Tyr Ala Arg Pro Ile Arg Trp Leu Val Ala Leu Tyr Gly Glu His Ile
 485 490 495
 Leu Pro Ile Thr Leu Gly Thr Ile Ile Ala Ser Arg Asn Ser Phe Gly
 500 505 510
 His Arg Gln Leu Asp Pro Arg Lys Ile Ser Ile Ser Ser Pro Gln Asp
 515 520 525
 Tyr Val Glu Thr Leu Arg Gln Ala Cys Val Val Val Ser Gln Lys Glu
 530 535 540
 Arg Arg Met Ile Ile Glu Gln Gly Leu Arg Ala His Ser Ser Asp Thr
 545 550 555 560
 Ile Ser Ala Ile Pro Leu Pro Arg Leu Ile Glu Glu Ala Thr Phe Leu
 565 570 575
 Ser Glu His Pro Phe Val Ser Cys Gly Gln Phe Ser Glu Gln Phe Cys
 580 585 590
 Ala Leu Pro Lys Glu Leu Leu Ile Ala Glu Met Val Asn His Gln Lys
 595 600 605
 Tyr Phe Pro Thr His Glu Thr Ser Ser Gly Ala Ile Ser Asn Phe Phe
 610 615 620
 Ile Val Val Cys Asp Asn Ser Pro Asn Asp Thr Ile Ile Glu Gly Asn
 625 630 635 640
 Glu Lys Ala Leu Thr Pro Arg Leu Thr Asp Gly Glu Phe Leu Phe Lys
 645 650 655
 Gln Asp Leu Gln Thr Pro Leu Thr Thr Phe Ile Glu Lys Leu Lys Ser
 660 665 670
 Val Thr Tyr Phe Glu Ala Leu Gly Ser Leu Tyr Asp Lys Val Glu Arg
 675 680 685
 Leu Lys Ala His Gln Arg Val Phe Ser Thr Phe Ser Ser Leu Ala Ala
 690 695 700
 Ser Glu Asp Leu Asp Ile Ala Ile Gln Tyr Cys Lys Ala Asp Leu Val
 705 710 715 720
 Ser Ala Val Val Asn Glu Phe Pro Glu Leu Gln Gly Ile Met Gly Glu
 725 730 735
 Tyr Tyr Leu Lys His Ala Asn Leu Pro Thr Ala Ser Ala Val Ala Val
 740 745 750
 Gly Glu His Leu Arg His Ile Thr Met Gly Gln Lys Leu Ser Thr Ile
 755 760 765
 Gly Thr Leu Leu Ser Leu Leu Asp Arg Leu Asp Asn Leu Leu Ala Cys
 770 775 780
 Phe Ile Leu Gly Leu Lys Pro Thr Ser Ser His Asp Pro Tyr Ala Leu
 785 790 795 800
 Arg Arg Gln Ser Leu Glu Val Leu Thr Leu Val Ser Ala Ser Arg Leu
 805 810 815
 Pro Ile Asp Leu Ala Ser Leu Leu Asp Arg Leu Ala Asp His Phe Pro
 820 825 830
 Ser Thr Ile Glu Glu Lys Val Trp Asp Lys Ser Lys Thr Ile His Glu
 835 840 845
 Ile Leu Glu Phe Ile Trp Gly Arg Leu Lys Thr Phe Met Gly Ser Leu
 850 855 860
 Glu Phe Arg Lys Asp Glu Ile Ala Ala Val Leu Ile Asp Ser Ala Thr
 865 870 875 880
 Xaa Asn Pro Ile Glu Ile Leu Asp Thr Ala Glu Ala Leu Gln Leu Leu
 885 890 895
 Lys Glu Glu His Thr Glu Lys Leu Ala Val Ile Thr Thr Thr His Asn
 900 905 910

Arg Leu Lys Lys Ile Leu Ser Ser Leu Lys Leu Ser Met Thr Ser Ser
 915 920 925
 Pro Ile Glu Val Leu Gly Asp Arg Glu Ser Asn Phe Lys Gln Val Leu
 930 935 940
 Asp Ala Phe Pro Gly Phe Pro Lys Glu Thr Ser Ala His Ala Phe Leu
 945 950 955 960
 Glu Tyr Phe Leu Ser Leu Ala Asp Leu Ser Asn Asp Ile Gln Asp Phe
 965 970 975
 Leu Asn Thr Val His Ile Ala Asn Asp Asp Gly Ala Ile Arg Asn Leu
 980 985 990
 Arg Ile Ser Leu Leu Leu Thr Ala Met Asp Lys Phe Ser Leu Cys His
 995 1000 1005
 Trp Glu Ser Val Ala Val
 1010

<210>1019

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1019

Asn Gly Asn Asp Val Leu Lys Thr Cys Ser Leu Ile Leu Leu Asn Leu
 1 5 10 15
 Cys Arg Tyr Phe Leu Leu Val Phe Cys Thr Ala Val Phe Phe Lys Arg
 20 25 30
 Tyr Ile Leu Ile Leu Thr Arg Thr Val Arg His Thr Glu Ile Tyr Ala
 35 40 45
 Cys Gly Glu Gly Val Thr Val Ala Leu Lys Ser Met Leu Pro Ser Met
 50 55 60
 Lys Gln Glu Ser Pro Ala Leu Ala Lys Glu Asn Val Lys Arg Lys Asn
 65 70 75 80
 Val Ile Pro Trp Ser His Leu Cys Gln Asn Ile Pro Ser Pro Tyr Ser
 85 90 95
 Leu

<210>1020

<211>207

<212>PRT

<213>Chlamydia pneumoniae

<400>1020

Arg Val Gly Leu Pro Asn Tyr Ile Thr Phe Ser Arg Leu Phe Ile Thr
 1 5 10 15
 Pro Ile Phe Met Ile Leu Tyr Leu Lys Gly Lys Trp Phe Gly Ile Thr
 20 25 30
 Pro Val Val Leu Pro Tyr Val Leu Leu Ala Leu Leu Ala Ile Ser Glu
 35 40 45
 Leu Thr Asp Ala Ile Asp Gly Tyr Val Ala Arg Lys Phe Ser Gln Val
 50 55 60
 Thr Asp Leu Gly Lys Leu Leu Asp Pro Met Ala Asp Ser Ile Tyr Arg
 65 70 75 80
 Ile Ser Ile Tyr Leu Thr Phe Thr Gln Pro Pro Val Asn Leu Pro Leu
 85 90 95
 Leu Leu Val Phe Ile Phe Leu Ala Arg Asp Ser Val Ile Ser Thr Leu
 100 105 110
 Arg Thr Val Cys Ala Phe Arg Gly Arg Val Val Ala Ala Arg Ala Ser
 115 120 125
 Gly Lys Leu Lys Ala Ile Leu Gln Gly Val Ser Phe Phe Leu Ile Leu
 130 135 140
 Leu Val Met Ile Pro His Ser Leu Gly Leu Leu Ser Gln Asn Gly Leu
 145 150 155 160
 Glu Ile Phe Ala Ser Val Thr Val Ser Ile Ile Ala Val Tyr Ser Ile
 165 170 175
 Ala Ser Gly Ile Glu Tyr Phe Trp Met Asn Lys Asn Phe Leu Ser Gln
 180 185 190
 Arg Ala Lys Thr Lys Asp Ser Glu Lys Asn His Glu Ser Lys Asp
 195 200 205

<210>1021

<211>476

<212>PRT

<213>Chlamydia pneumoniae

<400>1021

```

Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile Val Lys Val
 1           5           10           15
Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu Leu Ala Lys
      20           25           30
Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu Ile Ser Lys
      35           40           45
Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr Tyr Glu Phe
      50           55           60
Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr Glu Gly Leu
      65           70           75           80
Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
      85           90           95
Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
      100          105          110
Ala Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
      115          120          125
His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
      130          135          140
Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
      145          150          155          160
Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
      165          170          175
Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
      180          185          190
Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
      195          200          205
Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
      210          215          220
Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
      225          230          235          240
Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
      245          250          255
Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
      260          265          270
Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
      275          280          285
Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
      290          295          300
Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
      305          310          315          320
Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
      325          330          335
Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
      340          345          350
Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
      355          360          365
Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
      370          375          380
Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
      385          390          395          400
Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
      405          410          415
Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
      420          425          430
Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
      435          440          445
Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
      450          455          460
Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser

```

1046

Ser Gly Ile Thr Asn Tyr Gly Gly Glu Ile His Lys Ile His Asp Gln
 35 40 45
 Gly Arg Lys Lys Leu Ala Tyr Thr Ile Arg Gly Ala Arg Glu Gly Tyr
 50 55 60
 Tyr Tyr Phe Ile Tyr Phe Ser Val Ser Pro Gly Ala Ile Thr Glu Leu
 65 70 75 80
 Trp Lys Glu Tyr His Leu Asn Glu Asp Leu Leu Arg Phe Met Thr Leu
 85 90 95
 Arg Ala Asp Ser Val Lys Glu Val Leu Glu Phe Ala Ser Leu Pro Glu
 100 105 110

<210>1025

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1025

Met Asn Lys Pro Val His Asn Asn Glu His Arg Arg Lys Arg Phe Asn
 1 5 10 15
 Lys Lys Cys Pro Phe Val Ser Ala Gly Trp Lys Thr Ile Asp Tyr Lys
 20 25 30
 Asp Val Glu Thr Leu Lys Lys Phe Ile Thr Glu Arg Gly Lys Val Leu
 35 40 45
 Pro Arg Arg Ile Thr Gly Val Ser Ser Arg Phe Gln Gly Val Leu Ser
 50 55 60
 Gln Ala Ile Lys Arg Ala Arg His Leu Gly Leu Leu Pro Phe Val Gly
 65 70 75 80
 Glu Asp

<210>1026

<211>169

<212>PRT

<213>Chlamydia pneumoniae

<400>1026

Met Lys Gln Gln Leu Leu Leu Leu Glu Asp Val Asp Gly Leu Gly Arg
 1 5 10 15
 Ser Gly Asp Leu Ile Thr Ala Arg Pro Gly Tyr Val Arg Asn Tyr Leu
 20 25 30
 Ile Pro Lys Lys Lys Ala Val Ile Ala Gly Ala Gly Thr Leu Arg Leu
 35 40 45
 Gln Ala Lys Leu Lys Glu Gln Arg Leu Ile Gln Ala Ala Ala Asp Lys
 50 55 60
 Ala Asp Ser Glu Arg Ile Ala Gln Ala Leu Lys Asp Ile Val Leu Glu
 65 70 75 80
 Phe Gln Val Arg Val Asp Pro Asp Asn Asn Met Tyr Gly Ser Val Thr
 85 90 95
 Ile Ala Asp Ile Ile Ala Glu Ala Ala Lys Lys Asn Ile Phe Leu Val
 100 105 110
 Arg Lys Asn Phe Pro His Ala His Tyr Ala Ile Lys Asn Leu Gly Lys
 115 120 125
 Lys Asn Ile Pro Leu Lys Leu Lys Glu Glu Val Thr Ala Thr Leu Leu
 130 135 140
 Val Glu Val Thr Ser Asp Asn Glu Tyr Val Thr Val Leu Ala Gln Gly
 145 150 155 160
 Lys Gln Thr Glu Glu Asn Gln Glu Gly
 165

<210>1027

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1027

Val Gly Arg Glu Cys Glu Gly Leu Phe Met Ser Tyr Lys Ile Thr Leu
 1 5 10 15
 Pro Lys Ala Asp Glu Thr Thr Ala Lys Lys Val Thr Lys Ile Ser Glu
 20 25 30
 Ala Ser Thr Leu Ile Phe Ser Val Leu Lys Glu Lys Ala Ser Leu Gly

35 40 45
 Asn Val His Gly Phe Cys Gln Ala Glu Asn Ser Leu Ser Val Glu Ala
 50 55 60
 Asn Lys Ile Ile Ser Val Ala Glu Asn Thr Leu Ala Gly Cys Phe Cys
 65 70 75 80
 Lys

<210>1028

<211>455

<212>PRT

<213>Chlamydia pneumoniae

<400>1028

Leu Val Trp Phe Ser Met Ile Leu Pro Pro Tyr Ser Tyr Ser Leu Lys
 1 5 10 15
 Ile Gly Ala Ala Val Leu Phe Phe Cys Ser Ile Leu His Thr Phe Leu
 20 25 30
 Thr Pro Trp Leu Tyr Thr Leu Cys Gln Ser Tyr Glu His Lys Lys Leu
 35 40 45
 Val Phe Pro Glu Cys Trp Lys Arg Tyr Ala Arg Leu Ser Glu Leu Phe
 50 55 60
 Arg Ile Leu Ser Arg Val Glu Ile Val Phe Phe Leu Trp Ala Val Pro
 65 70 75 80
 Leu Phe Phe Trp Phe Leu Tyr Thr Glu Gly Tyr Arg Ile Ser Met Ala
 85 90 95
 Tyr Phe Asn Ser Arg Asn Tyr Gly Phe Ala Val Phe Ile Met Val Ile
 100 105 110
 Leu Ile Leu Leu Glu Ser Arg Pro Ile Val Tyr Phe Ala Glu Leu Val
 115 120 125
 Leu Ser Ser Ile Ala Lys Leu Gly Lys Thr Ser Pro Lys Ser Trp Trp
 130 135 140
 Trp Thr Leu Met Ile Ala Pro Pro Leu Leu Ser Cys Leu Leu Lys Glu
 145 150 155 160
 Thr Gly Ala Met Ile Ile Gly Ala Thr Leu Leu Met Arg His Phe Tyr
 165 170 175
 Val Phe Thr Pro Ser Arg Arg Phe Ala Tyr Ala Thr Ile Gly Leu Leu
 180 185 190
 Phe Ser Asn Ile Ser Ile Gly Gly Leu Thr Ser Tyr Val Ser Ser Arg
 195 200 205
 Ala Leu Phe Leu Ile Phe Pro Ala Leu Lys Trp Glu His Ser Phe Phe
 210 215 220
 Leu Ser His Phe Ala Trp Lys Ala Ile Val Ala Ile Leu Ile Ser Thr
 225 230 235 240
 Thr Ile Tyr Tyr Phe Ile Phe Arg Lys Glu Phe Lys Lys Phe Pro Asp
 245 250 255
 Ile Pro Ser Asp Lys Asp Pro Ser Val Glu Lys Val Pro Trp Trp Ile
 260 265 270
 Ile Cys Val Asn Ile Ile Phe Val Gly Ser Ile Ile Leu Ser Arg Ser
 275 280 285
 Thr Pro Leu Phe Met Gly Ala Leu Leu Leu Phe Tyr Leu Gly Phe Gln
 290 295 300
 Lys Phe Thr Ile Phe Tyr Gln Asp Pro Ile Asn Leu Ser Lys Val Cys
 305 310 315 320
 Tyr Val Gly Leu Phe Tyr Ala Gly Leu Val Phe Gly Asp Leu Gln
 325 330 335
 Glu Trp Trp Val Leu Asn Leu Met Gln Gly Leu Ser Asp Phe Gly Tyr
 340 345 350
 Met Thr Val Ser Tyr Thr Leu Ser Ile Phe Leu Asp Asn Ala Leu Val
 355 360 365
 Asn Tyr Leu Val His Asn Leu Ser Val Ala Thr Asp Cys Tyr His Tyr
 370 375 380
 Leu Val Val Ala Gly Cys Met Ala Ala Gly Gly Leu Thr Leu Val Ser
 385 390 395 400
 Asn Ile Pro Asn Ile Val Gly Tyr Leu Ile Leu Arg Ser Ala Phe Pro
 405 410 415

Ser Ser Thr Ile His Met Gly Trp Leu Phe Leu Gly Ala Leu Gly Pro
 420 425 430
 Ser Ile Ile Ser Leu Gly Val Phe Trp Leu Leu Lys Asn Val Pro Glu
 435 440 445
 Phe Leu Tyr Cys Phe Phe Arg
 450 455
 <210>1029
 <211>362
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1029
 Pro Val Asn His Gln Leu Leu Arg Glu Tyr Tyr Pro Ala Thr Gln Ala
 1 5 10 15
 Gly Phe Ser Phe Thr Ser Ala Leu Gly Gly Asp Gly Ile Asp Leu Arg
 20 25 30
 Val Ser Gly Tyr Thr Thr Thr Val Pro Ala Leu Leu Asn Ser Ile Leu
 35 40 45
 Thr Ser Leu Pro Asn Leu Glu Ile Arg Tyr Glu Thr Phe Leu Val Tyr
 50 55 60
 Lys Lys Gln Leu Leu Glu Leu Tyr Gln Gly Ala Leu Leu Asn Cys Pro
 65 70 75 80
 Val Arg Ser Gly Leu Asp Glu Leu Ala Ser Gln Val Met Lys Glu Thr
 85 90 95
 Tyr Ser Asn Thr Thr Lys Leu Ser Ala Leu Glu Lys Leu Ser Phe Ser
 100 105 110
 Glu Phe Gln Ala Phe Ala Ser Asn Leu Phe Asn Ser Val His Leu Glu
 115 120 125
 Val Met Val Leu Gly Asn Leu Ser Glu Gln Gln Lys Lys Asp Tyr Leu
 130 135 140
 Glu Met Leu Gln Val Phe Thr Ala Ser Arg Ser Ser His Ala Thr Lys
 145 150 155 160
 Pro Phe Tyr Tyr Glu Leu Gln Ser Gln Glu Ile Ser Glu Ile His His
 165 170 175
 Asp Tyr Pro Leu Thr Ala Asn Gly Met Leu Leu Leu Leu Gln Asp Lys
 180 185 190
 Ser Ser Pro Ser Ile Gln Gly Lys Val Cys Ala Glu Met Leu Phe Glu
 195 200 205
 Trp Leu His His Ile Thr Phe Glu Glu Leu Arg Thr Gln Gln Gln Leu
 210 215 220
 Gly Tyr Met Val Gly Ala Arg Tyr Arg Glu Phe Ala Ser Arg Pro Phe
 225 230 235 240
 Gly Phe Leu Tyr Ile Arg Ser Asp Ala Tyr Ser Pro Glu Glu Leu Leu
 245 250 255
 Ala Lys Thr Ser Leu Phe Leu Asn Lys Val Ser Ala Ser Pro Glu Lys
 260 265 270
 Phe Gly Ile Ser Gln Glu Lys Phe Ala Asn Ile Arg Lys Ala Tyr Ile
 275 280 285
 Asn Lys Ile Leu Glu Pro Glu His Ser Leu Asp Met Met Asn Ser Ala
 290 295 300
 Leu Phe Ser Leu Ala Phe Glu Arg Pro Phe Val Glu Phe Ser Thr Pro
 305 310 315 320
 Asp Leu Lys Ile Ala Ile Ala Glu Thr Leu Thr Tyr Glu Glu Phe Leu
 325 330 335
 Lys Tyr Cys Gln Cys Phe Leu Ser Asn Glu Leu Gly Thr Gln Thr Ser
 340 345 350
 Val Tyr Ile Arg Gly Thr Gln Lys Thr Ser
 355 360
 <210>1030
 <211>945
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1030
 Ile Tyr Arg Ala Ile Tyr Met Gln Phe Ser Arg Tyr Leu Arg Tyr Ala
 1 5 10 15

Phe Asp Asn Gln Tyr Leu Pro Glu Pro Leu Tyr Gln Lys Phe Ser Val
 20 25 30
 Phe His Gln Asn Tyr Ile Asp Ala Ala Thr Lys Lys Ala Ala Ala Asp
 35 40 45
 Gln Ala Glu Val Leu Cys Leu Gln Trp Val Lys Val Ile Ile Glu Asp
 50 55 60
 Leu Lys Asn Pro Phe Ile Phe Pro Pro Tyr His Lys Lys Ile Arg Ala
 65 70 75 80
 Pro Ile Asp Leu Phe Arg Leu Ser Ile Asp Phe Phe Ser Leu Val Ile
 85 90 95
 Asp Asp Lys Asn Ser Arg Ile Leu Asn Leu His Arg Leu Lys Glu Ile
 100 105 110
 Glu Glu Tyr Ile Ala Arg Gly Asp Asn Val Val Leu Leu Ala Asn His
 115 120 125
 Gln Thr Glu Cys Asp Pro Gln Leu Met Tyr Tyr Ala Leu Gly Lys Thr
 130 135 140
 His Pro Glu Leu Met Glu Asn Met Ile Phe Val Ala Gly Asp Arg Val
 145 150 155 160
 Thr Ser Asp Pro Leu Ala Arg Pro Phe Ser Met Gly Cys Asp Leu Leu
 165 170 175
 Cys Ile Tyr Ser Lys Arg His Ile Ala Thr Pro Pro Glu Leu Arg Glu
 180 185 190
 Glu Lys Leu Leu His Asn Gln Lys Ser Met Gln Ile Leu Lys Thr Leu
 195 200 205
 Leu Asn Glu Gly Gly Lys Phe Ile Tyr Val Ala Pro Ala Gly Gly Arg
 210 215 220
 Asp Arg Lys Asn Ala Glu Gly Arg Leu Tyr Pro Ser Glu Phe Ser Pro
 225 230 235 240
 Glu Ser Ile Glu Val Phe Arg Leu Leu Ala Lys Ala Ser Asn Gln Thr
 245 250 255
 Thr His Phe Tyr Pro Phe Ala Leu Lys Thr Tyr Asp Ile Leu Pro Pro
 260 265 270
 Pro Pro Lys Ile Glu Asn Ala Ile Gly Glu Gln Arg Ala Ile Phe Phe
 275 280 285
 Ala Pro Val Phe Phe Asn Phe Gly Ala Glu Leu Phe Phe Asp Ala Leu
 290 295 300
 Cys Ser Lys Glu Glu Leu Ile His Cys Asp Lys His Ala Gln Arg Thr
 305 310 315 320
 Leu Arg Ala Glu Lys Val Phe Ser Ile Cys Lys Lys Ser Ile Arg Gly
 325 330 335
 Ile Val Arg Cys Phe Gly Asn Phe Phe Val Pro Ile Leu Ile Cys Thr
 340 345 350
 Ser Leu Ser Ile Thr Ser Cys Glu Gln Gln Phe Lys Val Val Pro Asn
 355 360 365
 Gln Cys Pro Leu Gln Val Ser Thr Pro Ala Ala Ala Asp Gln Lys Ile
 370 375 380
 Glu Lys Ile Ile Cys Ser Asn Gly Leu Pro Leu Leu Ile Ile Ser Asp
 385 390 395 400
 Pro Asn Leu Pro Thr Ser Gly Ala Ala Leu Leu Val Lys Thr Gly Asn
 405 410 415
 Asn Ala Asp Pro Glu Glu Tyr Pro Gly Met Ala His Phe Thr Glu His
 420 425 430
 Cys Val Phe Leu Gly Asn Glu Lys Tyr Pro Glu Val Ser Gly Phe Pro
 435 440 445
 Gly Phe Leu Ser Glu Asn Asn Gly Val His Asn Ala Phe Thr Tyr Pro
 450 455 460
 Asn Lys Thr Val Phe Val Phe Ser Val Glu His Ser Ala Phe Ser Asp
 465 470 475 480
 Ala Leu Asp Gln Phe Val His Leu Phe Ile Asn Pro Lys Phe Arg Gln
 485 490 495
 Glu Asp Leu Asp Arg Glu Lys Tyr Ala Val His Gln Glu Phe Ala Ala
 500 505 510
 His Pro Leu Ser Asp Gly Arg Arg Val His Arg Ile Gln Gln Leu Val
 515 520 525

Ala Pro Gln Gly His Pro Cys Ala Arg Phe Gly Cys Gly Asn Ala Ser
 530 535 540
 Thr Leu Thr Pro Val Thr Thr Glu Lys Met Ala Glu Trp Phe Lys Leu
 545 550 555 560
 His Tyr Ser Pro Glu Asn Met Cys Ala Ile Ala Tyr Thr Ser Ala Pro
 565 570 575
 Leu Ser Lys Ala Lys Lys Gln Phe Ser Lys Ile Phe Ser Gln Ile Pro
 580 585 590
 Arg Ser Lys Asn Tyr Glu Arg Gln Glu Pro Phe Leu Pro Ser Gly Asp
 595 600 605
 Thr Ser Ser Leu Lys Asn Leu Tyr Ile Asn Gln Ala Ile Gln Pro Thr
 610 615 620
 Ser Asn Leu Glu Ile Tyr Trp His Ile Tyr Glu Ser Ser His Pro Ile
 625 630 635 640
 Pro Leu Gly Cys Tyr Lys Ala Leu Ala Glu Val Leu Arg Asn Glu Ser
 645 650 655
 Lys Asn Ser Leu Val Ser Leu Leu Lys Asn Glu Gln Leu Ile Thr Asp
 660 665 670
 Leu Asp Val Glu Phe Phe Arg Ser Ser Leu Asn Thr Gly Glu Phe Tyr
 675 680 685
 Ile Ser Tyr Glu Leu Thr Glu Lys Gly Asp Lys His Tyr Ser Gln Val
 690 695 700
 Ile Asp Ser Thr Phe Gln Tyr Leu Arg Tyr Ile Gln Glu His Gly Ile
 705 710 715 720
 Pro Asn Tyr Thr Leu Glu Glu Ile Ser Thr Ile Asn Ala Leu Asn Tyr
 725 730 735
 Cys Tyr Ser Ser Lys Ser Pro Leu Phe Asp Leu Leu Cys Lys Gln Ile
 740 745 750
 Val Ser Leu Gly Asn Glu Asp Leu Ser Thr Tyr Pro Tyr His Ser Leu
 755 760 765
 Val Tyr Pro Lys Tyr Ser Ser Glu Asp Glu Ser Ala Leu Leu Asn Leu
 770 775 780
 Val Ser Asp Pro Glu Gln Ala Arg Phe Val Leu Ser Ser Lys Asn Ser
 785 790 795 800
 Glu His Trp Glu Glu Ala Thr Gln Leu His Asp Pro Ile Phe Asp Met
 805 810 815
 Thr Tyr Tyr Val Lys Ala Leu Asp Gly Val Gln Asp Tyr Gly Lys Val
 820 825 830
 Gln Ser Leu Lys Pro Ile Ala Leu Pro Lys Pro Asn Leu Phe Ile Pro
 835 840 845
 Lys Glu Val Thr Leu Pro Gly Val His Leu Leu Lys Lys Gln Glu Phe
 850 855 860
 Pro Phe Ala Pro Ala Leu Ser Tyr Gln Asp Asp Lys Leu Thr Leu Tyr
 865 870 875 880
 His Cys Glu Asp His Tyr Tyr Thr Ala Pro Lys Leu Ser Ser Gln Ile
 885 890 895
 Arg Ile Arg Ser Pro Gln Ile Ser Arg Ser Ser Pro Gln Phe Leu Val
 900 905 910
 Ala Thr Glu Leu Tyr Cys Leu Ala Cys Glu Pro Ser Ala Phe Glu Gly
 915 920 925
 Val Leu Ser Arg Asn Ala Ser Trp Phe Phe Phe Tyr Phe Cys Phe Arg
 930 935 940
 Trp
 945
 <210>1031
 <211>521
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1031
 Ile Gly Thr Arg Lys Val Met Glu Asn Glu Ile Leu Leu Asn Ile Glu
 1 5 10 15
 Ser Lys Glu Ile Arg Tyr Ala His Leu Lys Asn Gly Gln Leu Phe Asp
 20 25 30
 Leu Thr Ile Glu Arg Lys Lys Val Arg Gln Leu Lys Gly Asn Ile Tyr

35 40 45
 Arg Gly Arg Val Thr Asn Ile Leu Arg Asn Ile Gln Ser Ala Phe Ile
 50 55 60
 Asn Ile Asp Glu Arg Glu Asn Gly Phe Ile His Ile Ser Asp Ile Leu
 65 70 75 80
 Glu Asn Ser Lys Lys Phe Glu Gln Met Phe Asp Met Asp Val Asp Ala
 85 90 95
 Leu Pro Glu Glu Ala Ser Glu Ala Pro Leu Leu Ser Ser Glu Glu Ala
 100 105 110
 Pro Ile Glu Glu Phe Leu Lys Leu Asp Ser Pro Val Leu Val Gln Val
 115 120 125
 Val Lys Glu Pro Ile Gly Ser Lys Gly Ala Arg Leu Thr Ser Asn Ile
 130 135 140
 Ser Ile Pro Gly Arg Tyr Leu Val Leu Leu Pro Asn Ser Pro His Arg
 145 150 155 160
 Gly Val Ser Arg Lys Ile Glu Asp Pro His Met Arg Glu Gln Leu Lys
 165 170 175
 Gln Leu Ile Arg Ser Phe Glu Met Pro Gln Asp Met Gly Leu Ile Cys
 180 185 190
 Arg Thr Ala Ser Thr Thr Ala Ser Thr Glu Ala Leu Ile Asn Glu Ala
 195 200 205
 His Asp Leu Leu Leu Thr Trp Lys Thr Ile Leu Glu Lys Phe Tyr Ser
 210 215 220
 Thr Glu Gln Pro Cys Leu Tyr Ser Glu Thr Asp Ile Leu Lys Lys
 225 230 235 240
 Ala Val Ile Thr Cys Ile Asp Lys Asn Tyr Lys Arg Leu Leu Ile Asp
 245 250 255
 Asp Tyr Ala Thr Tyr Gln Lys Cys Lys His Met Leu Lys Lys Tyr Ser
 260 265 270
 Pro Asp Ala Ser Ile Lys Ile Glu Tyr Tyr Arg Asp Ser Ile Pro Met
 275 280 285
 Phe Glu Arg Phe Asn Ile Glu Lys Glu Ile Asp Lys Ala Thr Arg Arg
 290 295 300
 Lys Ile Trp Leu Ser Ser Gly Gly Tyr Leu Phe Phe Asp Lys Thr Glu
 305 310 315 320
 Ala Met His Thr Ile Asp Val Asn Ser Gly Arg Ser Thr Gln Leu Glu
 325 330 335
 Ser Gly Val Glu Glu Thr Leu Val Gln Ile Asn Leu Glu Ala Ala Glu
 340 345 350
 Glu Ile Ala Arg Gln Leu Arg Leu Arg Asn Val Gly Gly Leu Val Ile
 355 360 365
 Ile Asp Phe Ile Asp Met Lys Ser Arg Lys Asn Gln Arg Arg Val Leu
 370 375 380
 Glu Arg Leu Lys Glu His Met Lys Tyr Asp Ala Ala Arg Cys Thr Ile
 385 390 395 400
 Leu Ser Met Ser Glu Phe Gly Leu Val Glu Met Thr Arg Gln Arg Asn
 405 410 415
 Arg Glu Ser Leu Met Gln Thr Leu Phe Thr Leu Cys Pro Tyr Cys Ser
 420 425 430
 Gly Asn Ala Ile Ile Lys Thr Pro Glu Ser Val Val Ile Glu Ile Glu
 435 440 445
 Arg Asp Leu Lys Lys Val Ile Asn His Lys Glu His Ser His Leu Cys
 450 455 460
 Leu Val Val His Pro Glu Ile Ala Ser Tyr Met Lys Gln Glu Asn Asp
 465 470 475 480
 Asp Asn Glu Met Ile Asn Leu Ala Lys Gln Leu Lys Ala Lys Leu Gln
 485 490 495
 Ile Asn Thr Ser Asp Ser Val His Leu Asn His Tyr Gln Phe Phe Ser
 500 505 510
 Leu Ile Thr Gly Glu Ser Ile Asp Leu
 515 520
 <210>1032
 <211>176
 <212>PRT

<213>Chlamydia pneumoniae

<400>1032

Ser Leu Ser Leu Val Ser Tyr Leu Ser Asn Pro Gln Lys Ala Leu Val
 1 5 10 15
 Leu Gly Ser Lys Gly Phe Ser Met Asp Cys Val Asp Asn Leu Lys Leu
 20 25 30
 Tyr Ile Phe Arg Leu Lys Leu Pro Gly Asp Thr Glu Arg Ile Ser Tyr
 35 40 45
 Ser Ile Ser Pro Glu Tyr Ile Arg Glu Lys Gly Glu Glu Glu Leu Leu
 50 55 60
 Asn Ser Pro Ile Glu Val Glu Gly Ser Leu Gly Arg Ile Asp Ser Asp
 65 70 75 80
 Gln Trp Ile Leu Ser Leu Ser Leu Lys Thr Gln Leu Gly Leu Cys Cys
 85 90 95
 Pro Val Cys Asn Asn Phe Phe Ser His Ser Val Cys Leu Pro Asp Leu
 100 105 110
 Gln Arg Val Ile Ser His Asp Glu Val Gly Ser Gly Val Phe Asp Cys
 115 120 125
 Arg Pro Leu Ile Arg Gln Glu Leu Leu Leu Glu Ser Asp Cys Phe Glu
 130 135 140
 Glu Cys Ser Gly Gln Gly Cys Pro Glu Arg Lys Asn Ile Leu Lys Phe
 145 150 155 160
 Leu Glu Asp Arg Lys Lys His Glu Gly Asn Asn Pro Phe Glu Tyr Leu
 165 170 175

<210>1033

<211>213

<212>PRT

<213>Chlamydia pneumoniae

<400>1033

Met Glu Val Gln Ile Gly Ile Asp Leu Met Gly Gly Asp His Ser Pro
 1 5 10 15
 Leu Val Val Trp Gln Val Leu Val Asp Val Leu Lys Ser Gln Ser Ser
 20 25 30
 Thr Ile Pro Phe Ala Phe Thr Leu Phe Ala Ser Glu Glu Ile Arg Lys
 35 40 45
 Gln Ile Gln Glu Glu Phe Ile Ser Asp Leu Pro Gln Glu Lys Phe Pro
 50 55 60
 Lys Ile Ile Ser Ala Glu Asn Phe Val Ala Met Glu Asp Ser Pro Leu
 65 70 75 80
 Ala Ala Ile Arg Lys Lys Ser Ser Ser Met Ala Leu Gly Leu Asp Tyr
 85 90 95
 Leu Gln Glu Asp Lys Leu Asp Ala Phe Ile Ser Thr Gly Asn Thr Gly
 100 105 110
 Ala Leu Val Thr Leu Ala Arg Ala Lys Ile Pro Leu Phe Pro Ala Val
 115 120 125
 Ser Arg Pro Ala Leu Leu Val Cys Val Pro Thr Met Arg Gly His Ala
 130 135 140
 Val Ile Leu Asp Val Gly Ala Asn Ile Ser Val Lys Pro Glu Glu Met
 145 150 155 160
 Val Gly Phe Ala Arg Met Gly Leu Ala Tyr Arg Gln Cys Leu Gly Asp
 165 170 175
 Ser Lys Ile Pro Thr Ile Gly Leu Leu Asn Ile Gly Ser Glu Glu Arg
 180 185 190
 Lys Gly Thr Glu Ala His Arg Gln Thr Phe Arg Met Leu Arg Glu Thr
 195 200 205
 Phe Gly Glu Leu Ser
 210

<210>1034

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1034

Arg Tyr Gly Ser Pro Ser Pro Asp Ile Pro Tyr Ala Ala Arg Asp Ile
 1 5 10 15

Trp Arg Thr Phe Leu Gly Asn Ile Glu Ser Gly Ala Val Phe Asp Gly
 20 25 30
 Ala Ala Asp Ile Val Val Thr Asp Gly Phe Thr Gly Asn Ile Phe Leu
 35 40 45
 Lys Thr Ala Glu Gly Val Phe Glu Phe Leu Gln Arg Ile Leu Gly Asp
 50 55 60
 Lys Leu Glu Ala Asp Ile Gln Arg Arg Leu Asp Tyr Thr Phe Tyr Pro
 65 70 75 80
 Gly Ser Val Val Cys Gly Leu Ser Lys Leu Val Ile Lys Cys His Gly
 85 90 95
 Lys Ala Cys Gly Ser Ser Leu Phe His Gly Ile Leu Gly Ser Ile Asn
 100 105 110
 Leu Ala Gln Ala Arg Leu Cys Lys Arg Ile Leu Ser Asn Leu Ile
 115 120 125

<210>1035

<211>1617

<212>PRT

<213>Chlamydia pneumoniae

<400>1035

Thr Pro Leu Arg Phe Lys Val Ala Met Val Ala Lys Lys Thr Val Arg
 1 5 10 15
 Ser Tyr Arg Ser Ser Phe Ser His Ser Val Ile Val Ala Ile Leu Ser
 20 25 30
 Ala Gly Ile Ala Phe Glu Ala His Ser Leu His Ser Ser Glu Leu Asp
 35 40 45
 Leu Gly Val Phe Asn Lys Gln Phe Glu Glu His Ser Ala His Val Glu
 50 55 60
 Glu Ala Gln Thr Ser Val Leu Lys Gly Ser Asp Pro Val Asn Pro Ser
 65 70 75 80
 Gln Lys Glu Ser Glu Lys Val Leu Tyr Thr Gln Val Pro Leu Thr Gln
 85 90 95
 Gly Ser Ser Gly Glu Ser Leu Asp Leu Ala Asp Ala Asn Xaa Leu Glu
 100 105 110
 His Phe Gln His Leu Phe Glu Glu Thr Thr Val Phe Gly Ile Asp Gln
 115 120 125
 Lys Leu Val Trp Ser Asp Leu Asp Thr Arg Asn Phe Ser Gln Pro Thr
 130 135 140
 Gln Glu Pro Asp Thr Ser Asn Ala Val Ser Glu Lys Ile Ser Ser Asp
 145 150 155 160
 Thr Lys Glu Asn Arg Lys Asp Leu Glu Thr Glu Asp Pro Ser Lys Lys
 165 170 175
 Ser Gly Leu Lys Glu Val Ser Ser Asp Leu Pro Lys Ser Pro Glu Thr
 180 185 190
 Ala Val Ala Ala Ile Ser Glu Asp Leu Glu Ile Ser Glu Asn Ile Ser
 195 200 205
 Ala Arg Asp Pro Leu Gln Gly Leu Ala Phe Phe Tyr Lys Asn Thr Ser
 210 215 220
 Ser Gln Ser Ile Ser Glu Lys Asp Ser Ser Phe Gln Gly Ile Ile Phe
 225 230 235 240
 Ser Gly Ser Gly Ala Asn Ser Gly Leu Gly Phe Glu Asn Leu Lys Ala
 245 250 255
 Pro Lys Ser Gly Ala Ala Val Tyr Ser Asp Arg Asp Ile Val Phe Glu
 260 265 270
 Asn Leu Val Lys Gly Leu Ser Phe Ile Ser Cys Glu Ser Leu Glu Asp
 275 280 285
 Gly Ser Ala Ala Gly Val Asn Ile Val Val Thr His Cys Gly Asp Val
 290 295 300
 Thr Leu Thr Asp Cys Ala Thr Gly Leu Asp Leu Glu Ala Leu Arg Leu
 305 310 315 320
 Val Lys Asp Phe Ser Arg Gly Gly Ala Val Phe Thr Ala Arg Asn His
 325 330 335
 Glu Val Gln Asn Asn Leu Ala Gly Gly Ile Leu Ser Val Val Gly Asn
 340 345 350
 Lys Gly Ala Ile Val Val Glu Lys Asn Ser Ala Glu Lys Ser Asn Gly

```

      355              360              365
Gly Ala Phe Ala Cys Gly Ser Phe Val Tyr Ser Asn Asn Glu Asn Thr
      370              375              380
Ala Leu Trp Lys Glu Asn Gln Ala Leu Ser Gly Gly Ala Ile Ser Ser
      385              390              395
Ala Ser Asp Ile Asp Ile Gln Gly Asn Cys Ser Ala Ile Glu Phe Ser
      405              410              415
Gly Asn Gln Ser Leu Ile Ala Leu Gly Glu His Ile Gly Leu Thr Asp
      420              425              430
Phe Val Gly Gly Gly Ala Leu Ala Ala Gln Gly Thr Leu Thr Leu Arg
      435              440              445
Asn Asn Ala Val Val Gln Cys Val Lys Asn Thr Ser Lys Thr His Gly
      450              455              460
Gly Ala Ile Leu Ala Gly Thr Val Asp Leu Asn Glu Thr Ile Ser Glu
      465              470              475
Val Ala Phe Lys Gln Asn Thr Ala Ala Leu Thr Gly Gly Ala Leu Ser
      485              490              495
Ala Asn Asp Lys Val Ile Ile Ala Asn Asn Phe Gly Glu Ile Leu Phe
      500              505              510
Glu Gln Asn Glu Val Arg Asn His Gly Gly Ala Ile Tyr Cys Gly Cys
      515              520              525
Arg Ser Asn Pro Lys Leu Glu Gln Lys Xaa Ser Gly Glu Asn Ile Asn
      530              535              540
Ile Ile Gly Asn Ser Gly Ala Ile Thr Phe Leu Lys Asn Lys Ala Ser
      545              550              555
Val Leu Glu Val Met Thr Gln Ala Glu Asp Tyr Ala Gly Gly Gly Ala
      565              570              575
Leu Trp Gly His Asn Val Leu Leu Asp Ser Asn Ser Gly Asn Ile Gln
      580              585              590
Phe Ile Gly Asn Ile Gly Gly Arg Asn Phe Trp Ile Gly Glu Tyr Val
      595              600              605
Gly Gly Gly Ala Ile Leu Ser Thr Asp Arg Val Thr Ile Ser Asn Asn
      610              615              620
Ser Gly Asp Val Val Phe Lys Gly Asn Lys Gly Gln Cys Leu Ala Gln
      625              630              635
Lys Tyr Val Ala Pro Gln Glu Thr Ala Pro Val Glu Ser Asp Ala Ser
      645              650              655
Ser Thr Asn Lys Asp Glu Lys Ser Leu Asn Ala Cys Ser His Gly Asp
      660              665              670
His Tyr Pro Pro Lys Thr Val Glu Glu Glu Val Pro Pro Ser Leu Leu
      675              680              685
Glu Glu His Pro Val Val Ser Ser Thr Asp Ile Arg Gly Gly Gly Ala
      690              695              700
Ile Leu Ala Gln His Ile Phe Ile Thr Asp Asn Thr Gly Asn Leu Arg
      705              710              715
Phe Ser Gly Asn Leu Gly Gly Gly Glu Glu Ser Ser Thr Val Gly Asp
      725              730              735
Leu Ala Ile Val Gly Gly Gly Ala Leu Leu Ser Thr Asn Glu Val Asn
      740              745              750
Val Cys Ser Asn Gln Asn Val Val Phe Ser Asp Asn Val Thr Ser Asn
      755              760              765
Gly Cys Asp Ser Gly Gly Ala Ile Leu Ala Lys Lys Val Asp Ile Ser
      770              775              780
Ala Asn His Ser Val Glu Phe Val Ser Asn Gly Ser Gly Lys Phe Gly
      785              790              795
Gly Ala Val Cys Ala Leu Asn Glu Ser Val Asn Ile Thr Asp Asn Gly
      805              810              815
Ser Ala Val Ser Phe Ser Lys Asn Arg Thr Arg Leu Gly Gly Ala Gly
      820              825              830
Val Ala Ala Pro Gln Gly Ser Val Thr Ile Cys Gly Asn Gln Gly Asn
      835              840              845
Ile Ala Phe Lys Glu Asn Phe Val Phe Gly Ser Glu Asn Gln Arg Ser
      850              855              860
Gly Gly Gly Ala Ile Ile Ala Asn Ser Ser Val Asn Ile Gln Asp Asn

```

865 870 875 880
 Ala Gly Asp Ile Leu Phe Val Ser Asn Ser Thr Gly Ser Tyr Gly Gly
 885 890 895
 Ala Ile Phe Val Gly Ser Leu Val Ala Ser Glu Gly Ser Asn Pro Arg
 900 905 910
 Thr Leu Thr Ile Thr Gly Asn Ser Gly Asp Ile Leu Phe Ala Lys Asn
 915 920 925
 Ser Thr Gln Thr Ala Ala Ser Leu Ser Glu Lys Asp Ser Phe Gly Gly
 930 935 940
 Gly Ala Ile Tyr Thr Gln Asn Leu Lys Ile Val Lys Asn Ala Gly Asn
 945 950 955 960
 Val Ser Phe Tyr Gly Asn Arg Ala Pro Ser Gly Ala Gly Val Gln Ile
 965 970 975
 Ala Asp Gly Gly Thr Val Cys Leu Glu Ala Phe Gly Gly Asp Ile Leu
 980 985 990
 Phe Glu Gly Asn Ile Asn Phe Asp Gly Ser Phe Asn Ala Ile His Leu
 995 1000 1005
 Cys Gly Asn Asp Ser Lys Ile Val Glu Leu Ser Ala Val Gln Asp Lys
 1010 1015 1020
 Asn Ile Ile Phe Gln Asp Ala Ile Thr Tyr Glu Glu Asn Thr Ile Arg
 1025 1030 1035 1040
 Gly Leu Pro Asp Lys Asp Val Ser Pro Leu Ser Ala Pro Ser Leu Ile
 1045 1050 1055
 Phe Asn Ser Lys Pro Gln Asp Asp Ser Ala Gln His His Glu Gly Thr
 1060 1065 1070
 Ile Arg Phe Ser Arg Gly Val Pro Lys Ile Pro Gln Ile Ala Ala Ile
 1075 1080 1085
 Gln Glu Gly Thr Leu Ala Leu Ser Gln Asn Ala Glu Leu Trp Leu Ala
 1090 1095 1100
 Gly Leu Lys Gln Glu Thr Gly Ser Ser Ile Val Leu Ser Ala Gly Ser
 1105 1110 1115 1120
 Ile Leu Arg Ile Phe Asp Ser Gln Val Asp Ser Ser Ala Pro Leu Pro
 1125 1130 1135
 Thr Glu Asn Lys Glu Glu Thr Leu Val Ser Ala Gly Val Gln Ile Asn
 1140 1145 1150
 Met Ser Ser Pro Thr Pro Asn Lys Asp Lys Ala Val Asp Thr Pro Val
 1155 1160 1165
 Leu Ala Asp Ile Ile Ser Ile Thr Val Asp Leu Ser Ser Phe Val Pro
 1170 1175 1180
 Glu Gln Asp Gly Thr Leu Pro Leu Pro Pro Glu Ile Ile Ile Pro Lys
 1185 1190 1195 1200
 Gly Thr Lys Leu His Ser Asn Ala Ile Asp Leu Lys Ile Ile Asp Pro
 1205 1210 1215
 Thr Asn Val Gly Tyr Glu Asn His Ala Leu Leu Ser Ser His Lys Asp
 1220 1225 1230
 Ile Pro Leu Ile Ser Leu Lys Thr Ala Glu Gly Met Thr Gly Thr Pro
 1235 1240 1245
 Thr Ala Asp Ala Ser Leu Ser Asn Ile Lys Ile Asp Val Ser Leu Pro
 1250 1255 1260
 Ser Ile Thr Pro Ala Thr Tyr Gly His Thr Gly Val Trp Ser Glu Ser
 1265 1270 1275 1280
 Lys Met Glu Asp Gly Arg Leu Val Val Gly Trp Gln Pro Thr Gly Tyr
 1285 1290 1295
 Lys Leu Asn Pro Glu Lys Gln Gly Ala Leu Val Leu Asn Asn Leu Trp
 1300 1305 1310
 Ser His Tyr Thr Asp Leu Arg Ala Leu Lys Gln Glu Ile Phe Ala His
 1315 1320 1325
 His Thr Ile Ala Gln Arg Met Glu Leu Asp Phe Ser Thr Asn Val Trp
 1330 1335 1340
 Gly Ser Gly Leu Gly Val Val Glu Asp Cys Gln Asn Ile Gly Glu Phe
 1345 1350 1355 1360
 Asp Gly Phe Lys His His Leu Thr Gly Tyr Ala Leu Gly Leu Asp Thr
 1365 1370 1375
 Gln Leu Val Glu Asp Phe Leu Ile Gly Gly Cys Phe Ser Gln Phe Phe

1380 1385 1390
 Gly Lys Thr Glu Ser Gln Ser Tyr Lys Ala Lys Asn Asp Val Lys Ser
 1395 1400 1405
 Tyr Met Gly Ala Ala Tyr Ala Gly Ile Leu Ala Gly Pro Trp Leu Ile
 1410 1415 1420
 Lys Gly Ala Phe Val Tyr Gly Asn Ile Asn Asn Asp Leu Thr Thr Asp
 1425 1430 1435 1440
 Tyr Gly Thr Leu Gly Ile Ser Thr Gly Ser Trp Ile Gly Lys Gly Phe
 1445 1450 1455
 Ile Ala Gly Thr Ser Ile Asp Tyr Arg Tyr Ile Val Asn Pro Arg Arg
 1460 1465 1470
 Phe Ile Ser Ala Ile Val Ser Thr Val Val Pro Phe Val Glu Ala Glu
 1475 1480 1485
 Tyr Val Arg Ile Asp Leu Pro Glu Ile Ser Glu Gln Gly Lys Glu Val
 1490 1495 1500
 Arg Thr Phe Gln Lys Thr Arg Phe Glu Asn Val Ala Ile Pro Phe Gly
 1505 1510 1515 1520
 Phe Ala Leu Glu His Ala Tyr Ser Arg Gly Ser Arg Ala Glu Val Asn
 1525 1530 1535
 Ser Val Gln Leu Ala Tyr Val Phe Asp Val Tyr Arg Lys Gly Pro Val
 1540 1545 1550
 Ser Leu Ile Thr Leu Lys Asp Ala Ala Tyr Ser Trp Lys Ser Tyr Gly
 1555 1560 1565
 Val Asp Ile Pro Cys Lys Ala Trp Lys Ala Arg Leu Ser Asn Asn Thr
 1570 1575 1580
 Glu Trp Asn Ser Tyr Leu Ser Thr Tyr Leu Ala Phe Asn Tyr Glu Trp
 1585 1590 1595 1600
 Arg Glu Asp Leu Ile Ala Tyr Asp Phe Asn Gly Gly Ile Arg Ile Ile
 1605 1610 1615
 Phe

<210>1036

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1036

Gln Ser Ile Leu Glu Ser Ile Ile Lys Tyr Phe Tyr Leu Ile His Asn
 1 5 10 15
 Ser Lys Met His Met Ser Asn Pro Ile Ser Leu Phe Ser Pro Ala Glu
 20 25 30
 Leu Ile Ala Lys Tyr Asn Leu Ile Pro Lys Thr Ser Pro Ile Tyr Pro
 35 40 45
 Arg Arg Thr Glu Leu Ile Ile Leu Glu Glu Asn Ala Cys Gln Thr Arg
 50 55 60
 Leu Thr Asn Val Ala Gln Val Leu His Pro Ser Ser Leu Phe Ser Met
 65 70 75 80
 Ser Lys Lys Ile Leu Asn Pro Cys Gly Cys Ser Gly Gly Pro Leu Cys
 85 90 95
 Trp Val Ile Leu Asn Ile Leu Ala Phe Ile Ile Thr Ser Val Leu Phe
 100 105 110
 Ile Ile Leu Leu Pro Val Asn Leu Ile Val Ala Gly Leu Arg Leu Phe
 115 120 125
 Met Pro Leu Pro Pro Lys Lys Ile Val Glu Asp Leu Ser Glu Pro Thr
 130 135 140
 Thr Glu Glu Thr Asn Glu Val Ile Gln Pro Phe Ile Phe Ala Leu Gln
 145 150 155 160
 Ala Leu Leu Phe Glu Asp Asn Lys Leu Arg Ser Phe Lys Ile Val Glu
 165 170 175
 Gln Ser Val Gly Lys Ala Pro Leu Pro Asn Pro Phe Leu Asn Arg Leu
 180 185 190
 Val Ala Ile Ser Pro Gln Xaa Ser Gln Glu Ala Met Arg Lys Ile Pro
 195 200 205
 Asp Leu Cys Ser Gln Leu Lys Lys Val Leu Lys Ser Leu Gly Val Leu
 210 215 220

Thr Pro Glu Trp Lys His Met Leu Lys Tyr Phe Glu Gly Leu Lys Asn
 225 230 235 240
 Glu His Asp Ser Asn Pro Asp Lys Lys Thr Phe Pro Ile Leu Ile Lys
 245 250 255
 Leu Leu Ile Glu Ala Leu Thr Gly Lys Ser Ser Leu Pro Lys Thr Pro
 260 265 270
 Ser Thr Lys Glu Lys Met Gln Ala Ala Leu Phe Ile Ala Ser Ser Cys
 275 280 285
 Lys Thr Cys Lys Pro Thr Trp Gly Glu Val Ile Thr Arg Ser Leu Asn
 290 295 300
 Arg Leu Tyr Ser Ile Ala Asn Glu Gly Asp Asn Gln Leu Leu Ile Trp
 305 310 315 320
 Val Gln Glu Phe Lys Glu Arg Glu Leu Met Ser Ile Gln Asp Gly Asp
 325 330 335
 Asp Ala Glu Glu Tyr Arg Phe Ala Ala Gln Gln His Gly Glu Arg Tyr
 340 345 350
 Thr Glu Ala Ile Glu Gln Val Leu Arg Asn Glu Ser Ala Ala Lys Leu
 355 360 365
 Gln Trp His Val Ile Asn Thr Met Lys Phe Phe His Gly Lys Asn Leu
 370 375 380
 Gly Leu Val Thr Glu His Leu Gln Asp Thr Leu Gly Ala Leu Thr Leu
 385 390 395 400
 Arg Gln Thr Thr Val Asp Thr His Gln Gly Arg Glu Asp Ala Asp Leu
 405 410 415
 Ser Ala Ala Leu Phe Leu Asn Lys Tyr Leu Asn Ser Gly Asn Gln Leu
 420 425 430
 Val Asn Ser Val Phe Lys Ser Met Gln Lys Ala Asp Pro Glu Thr Lys
 435 440 445
 Ala Leu Ile Arg Glu Phe Ala Leu Asp Ile Leu Tyr Ala Ser Leu Arg
 450 455 460
 Leu Pro Gln Thr Ser Ala His Thr Glu Val Phe Ser Thr Leu Leu Met
 465 470 475 480
 Asp Pro Glu Thr Tyr Glu Pro Asn Lys Ala Cys Ile Ala Tyr Leu Leu
 485 490 495
 Tyr Val Leu Lys Ile Ile Glu Leu
 500

<210>1037

<211>615

<212>PRT

<213>Chlamydia pneumoniae

<400>1037

Lys Gly Phe Ser Phe Ser Lys Val Gly Leu Asn Met Ile Pro Ser Gly
 1 5 10 15
 Leu Val Tyr Leu Leu Tyr Pro Leu Gly Phe Leu Ala Ser Leu Phe Phe
 20 25 30
 Gly Ser Ala Phe Ser Ile Gln Trp Trp Leu Ser Lys Lys Arg Lys Glu
 35 40 45
 Val Tyr Ala Pro Arg Ser Phe Trp Ile Leu Ser Ser Ile Gly Ala Thr
 50 55 60
 Leu Met Ile Val His Gly Thr Ile Gln Ser Gln Phe Pro Val Thr Val
 65 70 75 80
 Leu His Val Ile Asn Leu Ile Ile Tyr Leu Arg Asn Leu Asn Ile Thr
 85 90 95
 Ser Ser Arg Pro Ile Ser Phe Arg Ala Thr Leu Val Leu Met Ala Leu
 100 105 110
 Ser Val Val Phe Val Thr Leu Pro Phe Leu Tyr Val Asn Met Glu Trp
 115 120 125
 Met Ala Ser Pro Asn Ile Phe His Leu Pro Leu Pro Pro Ala Gln Leu
 130 135 140
 Ser Trp His Leu Ile Gly Cys Leu Gly Leu Ala Ile Phe Ser Gly Arg
 145 150 155 160
 Phe Leu Ile Gln Trp Phe Tyr Ile Glu Ser Asn Asn Thr Lys Asp Phe
 165 170 175
 Pro Leu Leu Phe Trp Lys Ile Gly Leu Leu Gly Gly Leu Leu Ala Leu

180 185 190
 Val Tyr Phe Ile Arg Ile Gly Asp Pro Ile Asn Ile Leu Cys Tyr Gly
 195 200 205
 Cys Gly Leu Phe Pro Ser Ile Ala Asn Leu Arg Leu Phe Tyr Lys Glu
 210 215 220
 Gln Arg Ser Thr Pro Tyr Leu Asp Thr His Cys Phe Leu Ser Ala Gly
 225 230 235 240
 Glu Ala Ser Gly Asp Ile Leu Gly Gly Lys Leu Ile Gln Ser Ile Lys
 245 250 255
 Ser Leu Tyr Pro Asn Ile Arg Phe Trp Gly Val Gly Gly Pro Ala Met
 260 265 270
 Arg Gln Glu Gly Leu Gln Pro Ile Leu Asn Met Glu Glu Phe Gln Val
 275 280 285
 Ser Gly Phe Ala Glu Val Leu Gly Ser Leu Phe Arg Leu Tyr Arg Asn
 290 295 300
 Tyr Arg Lys Ile Leu Lys Thr Ile Leu Lys His Lys Pro Ala Thr Leu
 305 310 315 320
 Ile Phe Ile Asp Phe Pro Asp Phe His Leu Leu Leu Ile Lys Lys Leu
 325 330 335
 Arg Lys His Gly Tyr Arg Gly Lys Ile Ile His Tyr Val Cys Pro Ser
 340 345 350
 Ile Trp Ala Trp Arg Pro Lys Arg Lys Arg Ile Leu Glu Gln His Leu
 355 360 365
 Asp Met Leu Leu Leu Ile Leu Pro Phe Glu Glu Gly Leu Phe Lys Asn
 370 375 380
 Thr Ser Leu Glu Thr Val Tyr Leu Gly His Pro Leu Val Glu Glu Ile
 385 390 395 400
 Ser Asp Tyr Lys Glu Gln Ala Ser Trp Lys Glu Lys Phe Leu Asn Ser
 405 410 415
 Asp Arg Pro Ile Val Ala Ala Phe Pro Gly Ser Arg Arg Gly Asp Ile
 420 425 430
 Ser Arg Asn Leu Arg Ile Gln Val Gln Ala Phe Leu Asn Ser Ser Leu
 435 440 445
 Ser Gln Thr His Gln Phe Val Val Ser Ser Ser Ser Ala Lys Tyr Asp
 450 455 460
 Glu Ile Ile Glu Asp Thr Leu Lys Ala Glu Gly Cys Gln His Ser Gln
 465 470 475 480
 Ile Ile Pro Met Asn Phe Arg Tyr Glu Leu Met Arg Ser Cys Asp Cys
 485 490 495
 Ala Leu Ala Lys Cys Gly Thr Ile Val Leu Glu Thr Ala Leu Asn Gln
 500 505 510
 Thr Pro Thr Ile Val Met Cys Arg Leu Arg Pro Phe Asp Thr Phe Leu
 515 520 525
 Ala Lys Tyr Ile Phe Lys Ile Leu Leu Pro Ala Tyr Ser Leu Pro Asn
 530 535 540
 Ile Ile Met Asn Ser Val Ile Phe Pro Glu Phe Ile Gly Gly Lys Lys
 545 550 555 560
 Asp Phe His Pro Glu Glu Thr Ala Thr Ala Leu Asp Leu Leu Asn Gln
 565 570 575
 His Gly Ser Lys Glu Lys Gln Lys Glu Asp Cys Arg Lys Leu Cys Lys
 580 585 590
 Val Met Thr Thr Gly Gln Ile Ala Ser Glu Glu Phe Leu Lys Arg Ile
 595 600 605
 Phe Asp Thr Leu Pro Ala Val
 610 615
 <210>1038
 <211>430
 <212>PRT
 <213>Chlamydia pneumoniae.
 <400>1038
 Met Val Cys Glu Asn Asn Ile Leu Ser Gly Arg Gly Leu Glu Leu Leu
 1 5 10 15
 Lys Lys Lys Ser Asn Ile Thr Leu Thr Pro Thr Ile Tyr Ser Val Ser
 20 25 30

Asn His Asn Ile Lys Leu Lys Asp Phe Ser Pro His Ala Leu Ser Val
 35 40 45
 Ile Lys Thr Leu Arg Lys Ala Gly Tyr Ile Ala Tyr Ile Val Gly Gly
 50 55 60
 Cys Ile Arg Asp Leu Leu Leu Asn Thr Thr Pro Lys Asp Phe Asp Ile
 65 70 75 80
 Ser Thr Ser Ala Lys Pro Glu Glu Ile Lys Ala Ile Phe Lys Asn Cys
 85 90 95
 Ile Leu Val Gly Lys Arg Phe Arg Leu Ala His Ile Arg Phe Ser Lys
 100 105 110
 Gln Ile Ile Glu Val Ser Thr Phe Arg Ser Gly Ser Thr Asp Glu Asp
 115 120 125
 Val Leu Ile Thr Lys Asp Asn Leu Trp Gly Thr Pro Glu Glu Asp Val
 130 135 140
 Leu Arg Arg Asp Phe Thr Ile Asn Gly Leu Phe Tyr Asp Pro Glu His
 145 150 155 160
 Glu Glu Ile Ile Asp Tyr Thr Gly Gly Val Asn Asp Leu Arg Asn Arg
 165 170 175
 Tyr Leu Arg Thr Ile Gly Asp Pro Phe Thr Arg Phe Lys Gln Asp Pro
 180 185 190
 Val Arg Met Leu Arg Leu Leu Lys Ile Leu Ser Arg Ser Pro Phe Thr
 195 200 205
 Val Glu Thr Gln Thr Gln Glu Ala Leu Ile Ala Cys Arg Gln Glu Leu
 210 215 220
 Ile Lys Ser Ser Arg Ala Arg Val Phe Glu Glu Leu Ile Lys Met Leu
 225 230 235 240
 Asn Ser Gly Ala Ala Lys Asn Phe Phe Gln Leu Leu Ile Glu Asn His
 245 250 255
 Leu Leu Glu Ile Leu Phe Pro Tyr Met Asp Lys Ala Phe Arg Leu Asn
 260 265 270
 Arg Ala Leu Glu Glu Gln Thr Ala Thr Tyr Leu Lys Ala Leu Asp Asp
 275 280 285
 Lys Ile Leu Lys Lys Glu Ala Glu Tyr Asp Arg His Gln Leu Met Ala
 290 295 300
 Ile Phe Leu Phe Pro Leu Val Asn Phe Asn Val Arg Tyr Lys His Gln
 305 310 315 320
 Lys His Pro Tyr Leu Ser Leu Thr Ser Val Phe Asp Tyr Ile Lys Asn
 325 330 335
 Phe Leu Glu Gln Phe Phe Ala Asp Ser Phe Thr Ser Cys Ser Lys Lys
 340 345 350
 Asn Phe Ile Leu Thr Ala Leu Ile Leu Gln Met Gln Tyr Arg Leu Thr
 355 360 365
 Pro Leu Ile Pro Thr Lys Lys Ala Leu Phe Phe Asn Lys Lys Leu Leu
 370 375 380
 His His Thr Arg Phe Leu Glu Ala Leu Ser Leu Leu Glu Ile Arg Ser
 385 390 395 400
 Ile Val Tyr Pro Lys Leu Asp Lys Val Tyr Val Ala Trp Ile Arg His
 405 410 415
 His Gln Thr Leu Lys Cys Lys Lys Asp Ser His Ser Gln Lys
 420 425 430

<210>1039

<211>395

<212>PRT

<213>Chlamydia pneumoniae.

<400>1039

Glu Arg Ile Asp Cys Trp Leu Asn Ser Met Gly Ile Glu Thr Leu Val
 1 5 10 15
 Leu Gly Pro Ile Pro Thr Pro Gly Val Ala Phe Ile Thr Arg Ala Tyr
 20 25 30
 Arg Ala Asp Ala Gly Ile Met Ile Ser Ala Ser His Asn Pro Tyr Arg
 35 40 45
 Asp Asn Gly Ile Lys Ile Phe Ser Leu Glu Gly Phe Lys Ile Ser Asp
 50 55 60
 Val Leu Glu Gln Arg Ile Glu Thr Met Val Ser Glu Ala Asp Phe Gly

65 70 75 80
 Pro Leu Pro Glu Asp His Ala Val Gly Lys Asn Lys Arg Val Ile Asp
 85 90 95
 Ala Met Gly Arg Tyr Val Glu Phe Val Lys Ala Thr Phe Pro Lys Gly
 100 105 110
 Arg Thr Leu Lys Gly Leu Lys Ile Val Leu Asp Cys Ala His Gly Ala
 115 120 125
 Ser Tyr Lys Val Ala Pro Ser Val Phe Glu Glu Leu Asp Ala Glu Val
 130 135 140
 Ile Cys Tyr Gly Cys Glu Pro Thr Gly Ile Asn Ile Asn Glu His Cys
 145 150 155 160
 Gly Ala Leu Phe Pro Gln Val Ile Gln Lys Ala Val Ile Glu His Gln
 165 170 175
 Ala His Leu Gly Ile Ala Leu Asp Gly Asp Gly Asp Arg Ile Ile Met
 180 185 190
 Val Asp Glu Lys Gly His Ile Val Asp Gly Asp Met Ile Leu Ser Ile
 195 200 205
 Cys Ala Gly Asp Leu Lys Lys Arg Ser Ala Leu Pro His Asn Arg Val
 210 215 220
 Val Ala Thr Ile Met Thr Asn Phe Gly Val Leu Lys Tyr Leu Glu Gly
 225 230 235 240
 Leu Gly Leu Gln Val Phe Thr Ser Pro Val Gly Asp Arg His Val Leu
 245 250 255
 His Ala Met Leu Glu His Glu Val Thr Xaa Gly Gly Glu Gln Ser Gly
 260 265 270
 His Met Ile Phe Leu Asp Tyr Asn Thr Thr Gly Asp Gly Ile Val Ser
 275 280 285
 Ala Leu Gln Val Leu Arg Ile Met Ile Glu Ser Glu Ser Met Leu Ser
 290 295 300
 Asp Leu Thr Ala Pro Ile Val Lys Ser Pro Gln Thr Leu Ile Asn Val
 305 310 315 320
 Ala Val Arg Glu Lys Ile Pro Leu Glu Thr Ile Pro Leu Ile Glu Arg
 325 330 335
 Thr Leu Arg Asp Val Gln Asp Ala Leu Gly Pro Ser Gly Arg Ile Leu
 340 345 350
 Leu Arg Tyr Ser Gly Thr Glu Asn Ile Cys Arg Val Met Val Glu Gly
 355 360 365
 His Lys Lys His Gln Val Asp Cys Leu Ala Lys Ala Leu Ala Asp Val
 370 375 380
 Ile Asp Ala Glu Leu Gly Thr Gly Ser Arg Glu
 385 390 395

<210>1040

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>1040

Met Cys Gly Ile Phe Gly Tyr Leu Gly Asn Gln Asp Gly Val Ser Ile
 1 5 10 15
 Val Leu Glu Gly Leu Ala Lys Leu Glu Tyr Arg Gly Tyr Asp Ser Ala
 20 25 30
 Gly Leu Ala Ala Val Val Glu Gln Glu Leu Phe Ile Arg Lys Thr Val
 35 40 45
 Gly Arg Val Gln Glu Leu Ser Asn Leu Phe Gln Glu Arg Glu Ile Pro
 50 55 60
 Thr Ala Ser Val Ile Gly His Thr Arg Trp Ala Thr His Gly Val Pro
 65 70 75 80
 Thr Glu Ile Asn Ala His Pro His Val Asp Glu Gly Arg Ser Cys Ala
 85 90 95
 Val Val His Asn Gly Ile Ile Glu Asn Phe Lys Glu Leu Arg Arg Glu
 100 105 110
 Leu Thr Ala Gln Gly Ile Ser Phe Ala Ser Asp Thr Asp Ser Glu Ile
 115 120 125
 Ile Val Gln Leu Phe Ser Leu Tyr Tyr Gln Glu Ser Gln Asp Leu Val
 130 135 140

Phe Ser Phe Cys Gln Thr Leu Ala Gln Leu Arg Gly Ser Val Ala Ala
 145 150 155 160
 Leu

<210>1041

<211>307

<212>PRT

<213>Chlamydia pneumoniae

<400>1041

Arg Ser Cys Ala Leu Ile His Lys Asp His Pro His Thr Ile Leu Cys
 1 5 10 15
 Ala Ser Gln Glu Ser Pro Leu Ile Leu Gly Leu Gly Lys Glu Glu Thr
 20 25 30
 Phe Ile Ala Ser Asp Ser Arg Ala Phe Phe Lys Tyr Thr Arg His Ser
 35 40 45
 Gln Ala Leu Ala Ser Gly Glu Phe Ala Ile Val Ser Gln Gly Lys Glu
 50 55 60
 Pro Glu Val Tyr Asn Leu Glu Leu Lys Lys Ile His Lys Asp Val Arg
 65 70 75 80
 Gln Ile Thr Cys Ser Glu Asp Ala Ser Asp Lys Ser Gly Tyr Gly Tyr
 85 90 95
 Tyr Met Leu Lys Glu Ile Tyr Asp Gln Pro Glu Val Leu Glu Gly Leu
 100 105 110
 Ile Gln Lys His Met Asp Glu Glu Gly His Ile Leu Ser Glu Phe Leu
 115 120 125
 Ser Asp Val Pro Ile Lys Ser Phe Lys Glu Ile Thr Ile Val Ala Cys
 130 135 140
 Gly Ser Ser Tyr His Ala Gly Tyr Leu Ala Lys Tyr Ile Ile Glu Ser
 145 150 155 160
 Leu Val Ser Ile Pro Val His Ile Glu Val Ala Ser Glu Phe Arg Tyr
 165 170 175
 Arg Arg Pro Tyr Ile Gly Lys Asp Thr Leu Gly Ile Leu Ile Ser Gln
 180 185 190
 Ser Gly Glu Thr Ala Asp Thr Leu Ala Ala Leu Lys Glu Leu Arg Arg
 195 200 205
 Arg Asn Ile Ala Tyr Leu Leu Gly Ile Cys Asn Val Pro Glu Ser Ala
 210 215 220
 Ile Ala Leu Gly Val Asp His Cys Leu Phe Leu Glu Ala Gly Val Glu
 225 230 235 240
 Ile Gly Val Ala Thr Thr Lys Ala Phe Thr Ser Gln Leu Leu Leu Leu
 245 250 255
 Val Phe Leu Gly Leu Lys Leu Ala Asn Val His Gly Ala Leu Thr His
 260 265 270
 Ala Glu Gln Cys Ser Phe Gly Gln Gly Leu Gln Ser Leu Pro Asp Leu
 275 280 285
 Cys Gln Lys Leu Leu Ala Gln Arg Val Ser Pro Phe Leu Gly Ala Ala
 290 295 300
 Leu Leu Leu
 305

<210>1042

<211>182

<212>PRT

<213>Chlamydia pneumoniae

<400>1042

Leu Thr Gln Asn Asn Val Pro Leu Ala Arg Asp Tyr Lys Ala Tyr Gln
 1 5 10 15
 Ile Ser Val Lys Asn Phe Leu Pro Asn Glu Ser Leu His Ser Trp Ala
 20 25 30
 Gln Pro Tyr Ser Tyr Glu Asp Lys Phe Leu Phe Leu Gly Arg Arg Leu
 35 40 45
 Met Tyr Pro Val Val Met Glu Ala Ala Leu Lys Leu Lys Glu Ile Ala
 50 55 60
 Tyr Ile Glu Ala Asn Ala Tyr Pro Gly Gly Glu Met Lys His Gly Pro
 65 70 75 80

Ile Ala Leu Ile Ser Lys Gly Thr Pro Val Ile Ala Phe Cys Gly Asp
 85 90 95
 Asp Ile Val Tyr Glu Lys Met Ile Gly Asn Met Met Glu Val Lys Ala
 100 105 110
 Arg His Ala His Val Ile Ala Ile Ala Pro Glu Ser Arg Glu Asp Ile
 115 120 125
 Ala Ala Val Ser Asp Gln Gln Ile Phe Val Pro Asp Cys His Phe Leu
 130 135 140
 Ala Ala Pro Val Leu Tyr Thr Ile Val Gly Gln Val Met Ala Tyr Ala
 145 150 155 160
 Met Ala Leu Ala Lys Gly Met Glu Ile Asp Cys Pro Arg Asn Leu Ala
 165 170 175
 Lys Ser Val Thr Val Glu
 180

<210>1043

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1043

Ser His Asp Leu Asp Xaa Arg Ile Lys Glu Pro Ser Glu His Ala Phe
 1 5 10 15
 Tyr Gly Gly Ile Tyr Phe Arg Ser Cys Arg Gln Asp Phe Tyr Met Pro
 20 25 30
 Cys Leu Leu Val Ser Leu Leu Leu Pro Thr Asp Cys Tyr Phe Cys Glu
 35 40 45
 Gly Gly Asn Ile Leu Cys Arg Val Phe Asn Cys Gln Asn Leu Gly Ile
 50 55 60
 Ser Trp Ile Arg His Leu Gly Pro Leu Gly Phe Ala Ile Leu Met Gly
 65 70 75 80
 Pro Ile Ile Met Ala Gly Thr Lys Val Ile Asp Tyr Cys Asn Arg Phe
 85 90 95
 Phe Met Phe Gly Leu Thr Val Ala Phe Gly Ile Phe Cys Ala Leu Gly
 100 105 110
 Phe Leu Lys Ile Gln Pro Ser Phe Leu Val Arg Ser Ser Trp Leu Thr
 115 120 125
 Thr Ile Asn Ala Phe Pro Val Phe Phe Leu Ala Phe Gly Phe Gln Ser
 130 135 140
 Ile Ile Pro Thr Leu Tyr Tyr Met Asp Lys Lys Val Gly Asp Val
 145 150 155 160
 Lys Lys Ala Ile Leu Ile Gly Thr Leu Ile Pro Leu Val Leu Tyr Val
 165 170 175
 Leu Trp Glu Val Val Val Leu Gly Ala Val Ser Leu Pro Ile Leu Ser
 180 185 190
 Gln Ala Lys Ile Gly Gly Tyr Thr Ala Val Glu Ala Leu Lys Gln Ala
 195 200 205
 His Arg Ser Trp Ala Phe Tyr Ile Ala Gly Glu Leu Phe Gly Phe Phe
 210 215 220
 Ala Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe
 225 230 235 240
 Leu Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Asn Phe Gln
 245 250 255
 Phe Ser Phe

<210>1044

<211>241

<212>PRT

<213>Chlamydia pneumoniae

<400>1044

Glu Gly Ser Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg
 1 5 10 15
 Val Gln Gly Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly
 20 25 30
 Leu Ile Val Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu
 35 40 45

Tyr Arg Ser Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu
 50 55 60
 Gly Val Ser Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Ser
 65 70 75 80
 Ala Val Gly Gly Leu Phe Leu Leu Tyr Ser Thr Leu Glu Gly Met Phe
 85 90 95
 Phe Gly Thr Leu Leu Pro Val Tyr Ala Ala Gln Tyr Gly Gly Gly Val
 100 105 110
 Ile Trp Ala Ala Phe Gly Ser Ala Ala Leu Val Phe Gly Leu Ala Ala
 115 120 125
 Val Tyr Gly Ala Phe Thr Lys Ser Asp Leu Thr Lys Ile Ser Lys Ile
 130 135 140
 Met Thr Phe Ala Leu Ile Gly Leu Leu Leu Val Thr Leu Val Phe Ala
 145 150 155 160
 Val Val Ser Met Phe Val Ser Met Pro Leu Ile Tyr Leu Leu Ile Cys
 165 170 175
 Tyr Leu Gly Leu Val Ile Phe Val Gly Leu Thr Ala Ala Asp Ala Gln
 180 185 190
 Ala Ile Arg Arg Ile Ser Ser Thr Ile Gly Asp Asn Asn Thr Leu Ser
 195 200 205
 Tyr Lys Leu Ser Leu Met Phe Ala Leu Lys Met Tyr Cys Asn Val Ile
 210 215 220
 Met Val Phe Trp Tyr Leu Leu Gln Ile Phe Ser Ser Ser Gly Asn Arg
 225 230 235 240
 Asp

<210>1045

<211>316

<212>PRT

<213>Chlamydia pneumoniae

<400>1045

Arg Cys Ile Asn Asn Ser Leu Leu Phe Pro Ser Tyr Leu Val Ser Phe
 1 5 10 15
 Leu Leu Leu Gln Leu Thr Leu Leu Leu Ala Met Phe Lys Phe Phe Arg
 20 25 30
 Asn Lys Leu Gln Ser Leu Phe Lys Lys Asn Ile Ser Leu Asp Leu Ile
 35 40 45
 Glu Asp Ala Glu Ser Leu Phe Tyr Glu Ala Asp Phe Gly Thr Glu Leu
 50 55 60
 Thr Glu Glu Leu Cys Ala Arg Leu Arg Arg Thr Lys Lys Ala Asp Ala
 65 70 75 80
 Ser Thr Ile Lys Asp Leu Ile Thr Val Leu Leu Arg Glu Ser Leu Glu
 85 90 95
 Gly Leu Pro Ser Gln Ala Ser Gln Ser Ser Gln Thr Arg Pro Ile Val
 100 105 110
 Ser Leu Leu Leu Gly Thr Asn Gly Ser Gly Lys Thr Thr Thr Ala Ala
 115 120 125
 Lys Leu Ala His Tyr Tyr Lys Glu Arg Ser Glu Ser Val Met Leu Val
 130 135 140
 Ala Thr Asp Thr Phe Arg Ala Ala Gly Met Asp Gln Ala Arg Leu Trp
 145 150 155 160
 Ala Asn Glu Leu Gly Cys Gly Phe Val Ser Gly Gln Pro Gly Gly Asp
 165 170 175
 Ala Ala Ala Ile Ala Phe Asp Gly Ile Gln Ser Ala Ile Ala Arg Gly
 180 185 190
 Tyr Ser Arg Val Ile Ile Asp Thr Ser Gly Arg Leu His Val His Gly
 195 200 205
 Asn Leu Met Lys Glu Leu Ser Lys Ile Val Ser Val Cys Gly Lys Ala
 210 215 220
 Leu Glu Gly Ala Pro His Glu Ile Phe Met Thr Val Asp Ser Thr Leu
 225 230 235 240
 Gly Asn Asn Ala Ile Glu Gln Val Arg Val Phe His Asp Val Val Pro
 245 250 255
 Leu Ser Gly Leu Ile Phe Thr Lys Val Asp Gly Ser Ala Lys Gly Gly

260 265 270
 Thr Leu Phe Gln Ile Ala Lys Arg Leu Lys Ile Pro Thr Lys Phe Ile
 275 280 285
 Gly Tyr Gly Glu Ser Leu Lys Asp Leu Asn Glu Phe Asp Leu Asp Leu
 290 295 300
 Phe Leu Asn Lys Leu Phe Pro Glu Val Glu Lys Ile
 305 310 315
 <210>1046
 <211>386
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1046
 Met His Leu His Glu Tyr Gln Ala Lys Asp Leu Leu Ala Ser Tyr Asp
 1 5 10 15
 Val Pro Ile Pro Tyr Trp Val Val Ser Ser Glu Glu Glu Gly Glu
 20 25 30
 Leu Leu Ile Thr Lys Ser Gly Leu Asp Ser Ala Val Val Lys Val Gln
 35 40 45
 Val His Ala Gly Gly Arg Gly Lys His Gly Gly Val Ile Val Ala Lys
 50 55 60
 Ser Ser Ala Gly Ile Leu Gln Ala Val Ala Lys Leu Leu Gly Met His
 65 70 75 80
 Phe Thr Ser Asn Gln Thr Ala Asp Gly Phe Leu Pro Val Glu Lys Val
 85 90 95
 Leu Ile Ser Pro Leu Val Ala Ile Gln Arg Glu Tyr Tyr Val Ala Val
 100 105 110
 Ile Met Asp Arg Lys His Arg Cys Pro Val Leu Met Leu Ser Lys Ala
 115 120 125
 Gly Gly Met Asp Ile Glu Glu Val Ala His Ser Ser Pro Glu Gln Ile
 130 135 140
 Leu Thr Leu Pro Leu Thr Ser Tyr Gly His Ile Tyr Ser Tyr Gln Leu
 145 150 155 160
 Arg Gln Ala Thr Lys Phe Met Glu Trp Glu Gly Glu Val Met His Gln
 165 170 175
 Gly Val Gln Leu Ile Lys Lys Leu Ala Lys Cys Phe Tyr Glu Asn Asp
 180 185 190
 Val Ser Leu Leu Glu Ile Asn Pro Leu Val Leu Thr Leu Glu Gly Glu
 195 200 205
 Leu Leu Val Leu Asp Ser Lys Ile Thr Ile Asp Asp Asn Ala Leu Tyr
 210 215 220
 Arg His Pro Asn Leu Glu Val Leu Tyr Asp Pro Ser Gln Glu Asn Val
 225 230 235 240
 Arg Asp Val Leu Ala Lys Gln Ile Gly Leu Ser Tyr Ile Ala Leu Ser
 245 250 255
 Gly Asn Ile Gly Cys Ile Val Asn Gly Ala Gly Leu Ala Met Ser Thr
 260 265 270
 Leu Asp Ile Leu Lys Leu His Gly Gly Asn Ala Ala Asn Phe Leu Asp
 275 280 285
 Val Gly Gly Gly Ala Ser Gln Lys Gln Ile Gln Glu Ala Val Ser Leu
 290 295 300
 Val Leu Ser Asp Glu Ser Val Lys Val Leu Phe Ile Asn Ile Phe Gly
 305 310 315 320
 Xaa Ile Met Asp Cys Ser Val Val Ala Ser Gly Leu Val Ala Val Met
 325 330 335
 Glu Thr Arg Asp Gln Val Val Pro Thr Val Ile Arg Leu Glu Gly Thr
 340 345 350
 Asn Val Glu Leu Gly Lys Glu Ile Val Gln Gln Ser Gly Ile Pro Cys
 355 360 365
 Gln Phe Val Ser Ser Met Glu Glu Gly Ala Arg Arg Ala Val Glu Leu
 370 375 380
 Ser Met
 385
 <210>1047
 <211>300

<212>PRT

<213>Chlamydia pneumoniae

<400>1047

```

Val Cys Arg Phe Arg Arg Tyr Met Phe His Ser Leu Ser Lys Asn Thr
  1           5           10           15
Pro Ile Ile Thr Gln Gly Ile Thr Gly Lys Ala Gly Ser Phe His Thr
      20           25           30
Glu Gln Cys Leu Ala Tyr Gly Thr Asn Phe Val Gly Gly Val Thr Pro
      35           40           45
Gly Lys Gly Gly Thr Leu Trp Leu Asp Leu Pro Val Tyr Asp Ser Val
      50           55           60
Leu Glu Ala Lys Gln Ala Thr Gly Cys Arg Ala Thr Met Ile Phe Val
      65           70           75           80
Pro Pro Pro Tyr Ala Ala Glu Ala Ile Leu Glu Ala Glu Glu Ala Gly
      85           90           95
Ile Glu Leu Ile Val Cys Ile Thr Glu Gly Ile Pro Val Arg Asp Met
      100          105          110
Leu Glu Val Ala Arg Val Met Asp Asn Ser Thr Ser Gln Leu Ile Gly
      115          120          125
Pro Asn Cys Pro Gly Ile Ile Lys Pro Gly Glu Cys Lys Ile Gly Ile
      130          135          140
Met Pro Gly Tyr Ile His Leu Pro Gly Asn Ile Gly Val Val Ser Arg
      145          150          155          160
Ser Gly Thr Leu Thr Tyr Glu Ala Val Trp Gln Leu Thr Gln Leu Lys
      165          170          175
Ile Gly Gln Ser Ile Cys Val Gly Ile Gly Gly Asp Pro Leu Asn Gly
      180          185          190
Thr Ser Phe Ile Asp Val Leu Gln Ala Leu Glu Glu Asp Pro Tyr Thr
      195          200          205
Glu Leu Ile Leu Met Ile Gly Glu Ile Gly Gly Ser Ala Glu Glu Glu
      210          215          220
Ala Ala Ala Trp Ile Gln Ala His Cys Thr Lys Pro Val Val Ala Phe
      225          230          235          240
Ile Ala Gly Val Thr Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly
      245          250          255
Ala Ile Ile Ser Gly Asn Ser Gly Asp Ala Lys Ser Lys Ile Gln Val
      260          265          270
Leu Arg Glu Ser Gly Val Thr Val Val Glu Ser Pro Ala His Ile Gly
      275          280          285
Lys Thr Val Asp Ala Val Leu Arg Ala Lys Glu Leu
      290          295          300

```

<210>1048

<211>369

<212>PRT

<213>Chlamydia pneumoniae

<400>1048

```

Ile Leu Met Leu Val Tyr Cys Phe Asp Pro Ser Val Pro Thr Ser Pro
  1           5           10           15
Glu His Arg Leu Met Ala Ala Leu Asp Arg Trp Phe Phe Leu Gly Gly
      20           25           30
His Arg Val Arg Ile Leu Thr Leu Glu Gly Asn His Tyr Arg Ala Phe
      35           40           45
Gln Glu Asn Met Ser Ile Ser Thr Val Glu Lys Ile Leu Lys Leu Ile
      50           55           60
Ser Tyr Leu Leu Ile Pro Ile Val Leu Ile Ala Leu Leu Ile Arg Cys
      65           70           75           80
Phe Leu His Ser Arg Phe Lys Cys Asn Trp Lys Cys Asp Ser Leu Ser
      85           90           95
Asp Ala Arg Val Pro His Asp Val Gln Pro Phe Asn Asp Phe Gln Leu
      100          105          110
Phe Asn Asn Gln Glu Arg Leu Asn Ile Trp Lys Asn Arg Arg Tyr Val
      115          120          125
Ser Gly Ile Asp Val Leu Met Val Pro Val Asp Tyr Leu Arg Ser Gln
      130          135          140

```

Phe Pro Gly Phe Lys Glu Ile Pro Glu Ala Ile Arg Cys Glu Asn Tyr
 145 150 155 160
 Val Ser Asp Gly Gln Phe Ser Glu Glu Ser Lys Thr Ser Tyr Leu Arg
 165 170 175
 Ala Met Leu Thr Asp Ile Val Gly Tyr Ile Leu Ser Leu Asp Glu Thr
 180 185 190
 Tyr Trp Thr Asn Val Ile Leu Lys Ile Arg Ala Met Cys Ile Thr Phe
 195 200 205
 Glu Ser Phe Pro Gly Lys Glu Ala Asp Pro Asn Tyr Ser Pro Arg Val
 210 215 220
 Thr His His Tyr Phe Asp Glu Ser Trp Lys Ala Leu Ala Arg His Val
 225 230 235 240
 Leu Gly Glu Gly Asn Met Val Asn Arg Leu Asp Glu Ala Leu Ile Arg
 245 250 255
 Thr Glu Lys Pro Gly Lys Glu Gly Glu Cys Ile Thr Lys Gln Phe Leu
 260 265 270
 Lys Asp Tyr Cys Lys Lys His Leu Glu Val Met Ser Cys Pro Asp Phe
 275 280 285
 Ile Glu Ser Leu Val Asp Glu Lys Ile Arg Glu Phe Arg Cys Pro Ser
 290 295 300
 Ile Leu Asn Ser Ala Val Cys Asp Val Ile Asp Arg Lys Cys Gln Glu
 305 310 315 320
 His Leu Leu Lys Ala Ile Ile Asn Glu Ala Asn Arg Arg Leu Pro Gly
 325 330 335
 Met Lys Asn Ser Ser Phe Thr Met Arg Gly Asn Gln Val Leu Phe Tyr
 340 345 350
 Thr Ile Phe Ser Pro Pro Lys Leu Pro Pro Ala Ala Ser Ser Val Tyr
 355 360 365
 Phe

<210>1049

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>1049

Leu Tyr Ile Asn Gln Phe Ala Asn Ile Leu Lys Ser Ser Phe Leu Met
 1 5 10 15
 Glu Val Tyr Ser Phe Ser Pro Ser Val Arg Thr Ser Phe Gln His Arg
 20 25 30
 Val Met Ala Ala Leu Asp Asn Trp Phe Phe Leu Gly Gly Arg Arg Leu
 35 40 45
 Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly Gln Ala Cys Glu Glu
 50 55 60
 Tyr Val Pro Ile Ser Thr Thr Glu Lys Val Leu Lys Ile Leu Ser Tyr
 65 70 75 80
 Leu Leu Ile Pro Ile Val Ile Ile Ala Leu Leu Ile Arg Tyr Leu Leu
 85 90 95
 His Ser Asn Phe Thr Ala Lys Val Ser Gln Lys Pro Trp Leu Lys Thr
 100 105 110
 Leu Gln Leu Gly Ile Asp Ile Lys Ser Phe Ile Leu Pro Gly Ser His
 115 120 125
 Val Asn Thr Met Asp Ser Ala Thr Leu Phe Lys Ala Ile Arg Leu Glu
 130 135 140
 Gly Lys Arg Val Asp Val Glu Tyr His Arg Leu His Ser Ser Asp Lys
 145 150 155 160
 Val Val Phe Tyr Ile Pro Ala Gln Lys Leu Pro Asp Asp Leu Arg Leu
 165 170 175
 Thr His Trp Leu Pro Glu Lys Glu Thr Arg Lys Thr Glu Tyr Val Arg
 180 185 190
 His Met Leu Ala His Val Met Gly Tyr Leu Thr Ser Gln Gly Lys Glu
 195 200 205
 Arg Leu Gln Gln Val Val Gln Asp Ser Arg Ser Ser Thr Ser Leu Gly
 210 215 220
 Ala Glu Lys Val Leu Gln Tyr Arg Phe Ile Asp His Pro Gln Ser Gln

1068

Arg Ser

<210>1051

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1051

Gly Ile Asp Met Ile Thr Lys Gln Leu Arg Ser Trp Leu Ala Val Leu
 1 5 10 15
 Val Gly Ser Ser Leu Leu Ala Leu Pro Leu Ser Gly Gln Ala Val Gly
 20 25 30
 Lys Lys Glu Ser Arg Val Ser Glu Leu Pro Gln Asp Val Leu Leu Lys
 35 40 45
 Glu Ile Ser Gly Gly Phe Ser Lys Val Ala Thr Lys Ala Thr Pro Ala
 50 55 60
 Val Val Tyr Ile Glu Ser Phe Pro Lys Ser Gln Ala Val Thr His Pro
 65 70 75 80
 Ser Pro Gly Arg Arg Gly Pro Tyr Glu Asn Pro Phe Asp Tyr Phe Asn
 85 90 95
 Asp Glu Phe Phe Asn Arg Phe Phe Gly Leu Pro Ser Gln Arg Glu Lys
 100 105 110
 Pro Gln Ser Lys Glu Ala Val Arg Gly Thr Gly Phe Leu Val Ser Pro
 115 120 125
 Asp Gly Tyr Ile Val Thr Asn Asn His Val Val Glu Asp Thr Gly Lys
 130 135 140
 Ile His Val Thr Leu His Asp Gly Gln Lys Tyr Pro Ala Thr Val Ile
 145 150 155 160
 Gly Leu Asp Pro Lys Thr Asp Leu Ala Val Ile Lys Ile Lys Ser Gln
 165 170 175
 Asn Leu Pro Tyr Leu Ser Phe Gly Asn Ser Asp His Leu Lys Val Gly
 180 185 190
 Asp Trp Ala Ile Ala Ile Gly Asn Pro Phe Gly Leu Gln Ala Thr Val
 195 200 205
 Thr Val Val Ser Ser Val Leu Lys Glu Glu Ile Asn Ser Thr Leu Gln
 210 215 220
 Ile Leu Lys Ile Leu Phe Arg Gln Met Leu Arg Leu Ile Gln Ala Thr
 225 230 235 240
 Leu Glu Ala Leu Phe
 245

<210>1052

<211>317

<212>PRT

<213>Chlamydia pneumoniae

<400>1052

Ile Pro Lys Pro Pro Val Ser Phe Phe Trp Lys Leu Arg Pro Leu Lys
 1 5 10 15
 Ser Arg Arg Leu Gly Asn Cys Asn Trp Lys Ser Leu Arg Ser Ser Ser
 20 25 30
 Tyr Gly His Arg Ser Val Ile Ser Ala Lys Gly Arg Asn Gln Leu His
 35 40 45
 Ile Ala Asp Phe Glu Asp Phe Ile Gln Thr Asp Ala Ala Ile Asn Pro
 50 55 60
 Gly Asn Ser Gly Gly Pro Leu Leu Asn Ile Asp Gly Gln Val Ile Gly
 65 70 75 80
 Val Asn Thr Ala Ile Val Ser Gly Ser Gly Tyr Ile Gly Ile Gly
 85 90 95
 Phe Ala Ile Pro Ser Leu Met Ala Asn Arg Ile Ile Asp Gln Leu Ile
 100 105 110
 Arg Asp Gly Gln Val Thr Arg Gly Phe Leu Gly Val Thr Leu Gln Pro
 115 120 125
 Ile Asp Ala Glu Leu Ala Ala Cys Tyr Lys Leu Glu Lys Val Tyr Gly
 130 135 140
 Ala Leu Val Thr Asp Val Val Lys Gly Ser Pro Ala Asp Lys Ala Gly
 145 150 155 160

Leu Lys Gln Glu Asp Val Ile Ile Ala Tyr Asn Gly Lys Glu Val Asp
 165 170 175
 Ser Leu Ser Met Phe Arg Asn Ala Val Ser Leu Met Asn Pro Asp Thr
 180 185 190
 Arg Ile Val Leu Lys Val Val Arg Glu Gly Lys Val Ile Glu Ile Pro
 195 200 205
 Val Thr Val Ser Gln Ala Pro Lys Glu Asp Gly Met Ser Ala Leu Gln
 210 215 220
 Arg Val Gly Ile Arg Val Gln Asn Leu Thr Pro Glu Thr Ala Lys Lys
 225 230 235 240
 Leu Gly Ile Ala Pro Glu Thr Lys Gly Ile Leu Ile Ile Ser Val Glu
 245 250 255
 Pro Gly Ser Val Ala Ala Ser Ser Gly Ile Ala Pro Gly Gln Leu Ile
 260 265 270
 Leu Ala Val Asn Arg Gln Lys Val Ser Ser Ile Glu Asp Leu Asn Arg
 275 280 285
 Thr Leu Lys Asp Ser Asn Asn Glu Asn Ile Leu Leu Met Val Ser Gln
 290 295 300
 Gly Asp Val Ile Arg Phe Ile Ala Leu Lys Pro Glu Glu
 305 310 315

<210>1053

<211>104

<212>PRT

<213>Chlamydia pneumoniae

<400>1053

Arg Phe Ser Tyr Glu Ile Leu Pro Gly Gly Ser Arg Gly Trp Arg Ser
 1 5 10 15
 Ser Ala Asn Leu Pro Ile Val Lys Val Leu Gln Glu Ile Tyr Ser Asp
 20 25 30
 Leu Tyr Asn Glu Glu Cys Leu Arg Leu Val Met Pro Ala Thr Ile Pro
 35 40 45
 Ile Gly Pro Leu Leu Gly Glu Ala Ala Gln Thr Ser Pro Ile Ile Cys
 50 55 60
 Gly Thr Ser Tyr Leu Ser Asp Asp Ile His Ala Ala Glu Glu His Phe
 65 70 75 80
 Ser Met Asp Gln Leu Lys Lys Gly Phe Leu Ser Ile Cys Gln Leu Leu
 85 90 95
 Asp Lys Leu Pro Lys Ile Lys Glu
 100

<210>1054

<211>393

<212>PRT

<213>Chlamydia pneumoniae

<400>1054

Met Leu Asn His Ala Lys Lys His Ala Lys Pro Tyr Val Leu Ile Phe
 1 5 10 15
 Phe Ser Thr Lys Asp Lys Leu Ser Tyr Cys Asp Ile Ile Phe Asn Asn
 20 25 30
 Cys Ser Gly Lys Pro Met Asn Leu Asp Ser Lys His Phe Asp Ile Asn
 35 40 45
 Ser Ala Asn Phe Leu Glu Glu Phe Ala Lys Phe Ile Ser Phe Pro Ser
 50 55 60
 Ile Ser Ala Asp Ser Asp His Leu Gln Asp Cys Glu Asn Cys Ala His
 65 70 75 80
 Phe Leu Val Asp His Val Asn Lys Ile Phe Asp Val Glu Leu Trp Glu
 85 90 95
 Thr Pro Gly His Pro Pro Ile Ile Tyr Ala Ser Tyr Lys Ser Glu Asp
 100 105 110
 Pro Leu Ser Pro Thr Leu Met Leu Tyr Asn His Tyr Asp Val Gln Pro
 115 120 125
 Ala Gln Leu Ser Asp Gly Trp Lys Gly Asp Pro Phe Ile Leu Arg Glu
 130 135 140
 Glu Asn Gly Asn Leu Tyr Ala Arg Gly Ala Ser Asp Asn Lys Gly Gln
 145 150 155 160

Cys Phe Tyr Thr Leu Lys Ala Leu Gln His Tyr Tyr Glu Ser Gln Gly
 165 170 175
 Asn Phe Pro Leu Asn Ile Ile Trp Leu Ile Glu Gly Glu Glu Glu Ser
 180 185 190
 Gly Ser Leu Ala Leu Phe Thr Trp Leu Glu Lys Lys Lys Glu Ala Leu
 195 200 205
 Arg Ala Asp Tyr Leu Leu Ile Val Asp Gly Gly Phe Leu Ser Glu Lys
 210 215 220
 His Pro Tyr Val Ser Ile Gly Ala Arg Gly Ile Val Ser Met Lys Ile
 225 230 235 240
 Ser Leu Glu Glu Gly Asn Lys Asp Met His Ser Gly Val Leu Gly Gly
 245 250 255
 Ile Ala Tyr Asn Thr Asn Arg Ala Leu Ser Glu Ile Leu Ser Ser Leu
 260 265 270
 His His Pro Asp Asn Ser Ile Ala Ile Glu Gly Phe Tyr Asp Asp Leu
 275 280 285
 Ala Leu Pro Ser Asp Ser Asp Arg Pro Asp Leu Pro Lys Ser Asp Thr
 290 295 300
 Leu Arg Glu Cys Glu Glu Asn Leu Gly Phe Arg Pro Gln Gly Tyr Glu
 305 310 315 320
 Ala Ser Tyr Ser Pro Glu Glu Ser Ala Leu Arg Pro Thr Val Glu Ile
 325 330 335
 Asn Gly Ile Ser Gly Gly Tyr Thr Gly Pro Gly Phe Lys Thr Val Ile
 340 345 350
 Pro Tyr Arg Ala Thr Ala Tyr Leu Ser Cys Arg Leu Val Pro Asn Gln
 355 360 365
 Asp Pro Asp Lys Ala Ala His Gln Val Ile His His Leu Lys Gln Gln
 370 375 380
 Val Pro Ser Ser Leu Lys Val Leu Leu
 385 390

<210>1055

<211>978

<212>PRT

<213>Chlamydia pneumoniae

<400>1055

Val Thr Glu Ser Met Lys Ala Gly Asp Thr Tyr Arg Asn Phe Ile Ile
 1 5 10 15
 Lys Ser Cys Lys Asp Leu Pro Glu Ile Glu Ser Lys Leu Leu Glu Ala
 20 25 30
 Glu His Lys Pro Thr Gly Ala Ser Ile Met Met Ile Val Asn Asn Asp
 35 40 45
 Glu Glu Asn Val Phe Asn Ile Cys Phe Arg Thr Cys Pro Gln Thr Ser
 50 55 60
 Asn Gly Val Ala His Val Leu Glu His Met Val Leu Cys Gly Ser Glu
 65 70 75 80
 Asn Tyr Pro Val Arg Asp Pro Phe Phe Ser Met Thr Arg Arg Ser Leu
 85 90 95
 Asn Thr Phe Ile Asn Ala Phe Thr Gly Pro Asp Phe Thr Cys Tyr Pro
 100 105 110
 Ala Ala Ser Gln Ile Pro Glu Asp Phe Tyr Asn Leu Leu Ser Val Tyr
 115 120 125
 Ile Asp Ala Val Phe His Pro Leu Leu Thr Lys Gln Ser Phe Leu Gln
 130 135 140
 Glu Ala Trp Arg Tyr Glu Phe Asn Ser Glu Asn His Leu Cys Tyr Thr
 145 150 155 160
 Gly Val Val Phe Asn Glu Met Lys Gly Ala Met Met Ser Gly Glu Ala
 165 170 175
 Arg Leu Ser Glu Ala Leu Asn Ala Ala Ile Phe Pro Ser Val Thr Tyr
 180 185 190
 Gly Val Asn Ser Gly Gly Glu Pro Arg Glu Ile Val Thr Leu Ser His
 195 200 205
 Glu Asp Val Arg Ala Phe His Gln Ser Gln Tyr Ser Ile Asn Arg Cys
 210 215 220
 Leu Phe Tyr Phe Tyr Gly Asn Ile Lys Pro Ser Arg His Leu Asp Phe

225					230					235				240	
Leu	Glu	Glu	Lys	Leu	Leu	Arg	Gln	Ala	Thr	Lys	Leu	Glu	Lys	Gln	Ala
				245					250					255	
Val	Ser	Val	Pro	Leu	Gln	Lys	Arg	Phe	Lys	Glu	Pro	Val	Arg	Asn	Ile
			260					265					270		
Leu	Thr	Tyr	Pro	Val	Asp	His	Gln	Glu	Glu	Asp	Lys	Val	Leu	Phe	Gly
		275					280					285			
Ile	Ser	Trp	Leu	Thr	Cys	Ser	Ile	Leu	Glu	Gln	Gln	Glu	Leu	Leu	Ala
	290					295					300				
Leu	His	Val	Leu	Glu	Ile	Ile	Leu	Met	Gly	Thr	Asp	Ala	Ser	Pro	Leu
305					310					315				320	
Lys	Ser	Arg	Leu	Leu	Lys	Ser	Gly	Phe	Cys	Lys	Gln	Thr	Glu	Met	Ser
			325					330						335	
Ile	Glu	Asn	Asp	Ile	Arg	Glu	Ile	Pro	Met	Thr	Leu	Val	Cys	Lys	Gly
		340						345					350		
Cys	Ser	Pro	Ala	Gly	Ala	Gln	Lys	Leu	Glu	Ala	Leu	Ile	Phe	Ala	Ser
		355					360					365			
Leu	Glu	Glu	Ile	Ile	Arg	Glu	Gly	Ile	Ser	Glu	Asn	Ile	Val	Glu	Gly
370						375					380				
Ala	Val	His	Gln	Leu	Glu	Leu	Ser	Arg	Lys	Glu	Ile	Thr	Gly	Tyr	Ser
385					390					395				400	
Leu	Pro	Tyr	Gly	Leu	Ser	Leu	Phe	Phe	Arg	Ser	Gly	Leu	Leu	Lys	Gln
			405						410					415	
His	Gly	Gly	Ser	Ala	Glu	Asp	Gly	Leu	Arg	Ile	His	Asn	Leu	Phe	Ser
			420					425					430		
Glu	Leu	Arg	Asn	Ser	Leu	Lys	Asn	Ser	Asp	Tyr	Leu	Ala	Lys	Leu	Ile
		435					440					445			
Arg	Lys	Tyr	Phe	Leu	Asp	Asn	Pro	His	Phe	Ala	Arg	Val	Ile	Leu	Leu
450					455						460				
Pro	Asp	Thr	Glu	Leu	Val	Ala	Lys	Asp	Asn	Lys	Asp	Glu	Gln	Gln	Leu
465					470					475				480	
Leu	Leu	Ser	Val	Ser	Glu	Lys	Leu	Thr	Asp	Glu	Asn	Lys	Glu	Lys	Ile
			485						490					495	
Gln	Gln	Asn	Val	Arg	Glu	Leu	Thr	Glu	Ser	Gln	Glu	Gln	Lys	Glu	Asp
			500					505					510		
Leu	Asn	Gly	Ile	Leu	Pro	Asn	Leu	Ala	Leu	Asp	Lys	Val	Pro	Thr	Ser
		515					520					525			
Gly	Lys	Glu	Phe	Pro	Leu	Ile	Lys	Glu	Gly	Leu	Ser	Gln	Gly	Glu	Val
		530					535				540				
Leu	His	His	Glu	Cys	Phe	Thr	Asn	Asp	Ile	Val	Phe	Ile	Asp	Val	Val
545					550					555				560	
Leu	Asp	Ile	Pro	Pro	Leu	Ser	Gly	Glu	Glu	Leu	Pro	Trp	Leu	Arg	Leu
			565						570					575	
Leu	Val	Phe	Leu	Met	Leu	Gln	Leu	Gly	Cys	Gly	Gly	Arg	Ser	Tyr	Lys
			580					585					590		
Glu	His	Leu	Glu	Phe	Leu	Leu	Glu	His	Thr	Gly	Gly	Val	Asp	Val	Ser
		595					600					605			
Tyr	Asp	Phe	Ser	Pro	His	Ala	Asn	Lys	Asn	Ser	Phe	Leu	Ser	Pro	Ser
		610				615					620				
Val	Ser	Ile	Arg	Gly	Lys	Ala	Leu	Ser	Ser	Lys	Ser	Glu	Lys	Leu	Cys
625					630					635				640	
Gly	Ile	Val	Ser	Asp	Met	Leu	Thr	Ser	Val	Asp	Phe	Thr	Asp	Ile	Pro
			645						650					655	
Arg	Ile	Arg	Glu	Leu	Leu	Met	Gln	His	Asn	Glu	Ala	Leu	Thr	Asn	Ser
			660					665					670		
Val	Arg	Asn	Ser	Pro	Met	Ser	Tyr	Ala	Val	Ser	Met	Ala	Cys	Ser	Gly
		675					680					685			
Asn	Ser	Ile	Thr	Gly	Ala	Met	Ser	Tyr	Leu	Thr	Thr	Gly	Leu	Pro	Tyr
		690				695					700				
Val	Lys	Lys	Ile	Arg	Glu	Leu	Thr	Lys	Asn	Phe	Asp	Gln	Asn	Ile	Asp
705					710					715				720	
Glu	Ala	Val	Val	Ile	Leu	Gln	Arg	Leu	Tyr	Thr	Lys	Cys	Phe	Ser	Gly
			725						730				735		
Lys	Arg	Gln	Ile	Val	Ile	Ser	Gly	Ser	Ala	His	Asn	Tyr	Gln	Gln	Leu

740 745 750
 Lys Asp Asn Lys Phe Tyr Gly Leu Leu Asp Tyr Leu Ile Val Ile Pro
 755 760 765
 Glu Pro Trp Glu Asn Pro Ser Ile Asn Leu Tyr Val Thr Ser Arg Gly
 770 775 780
 Leu His Ile Pro Ala Arg Ala Ala Phe Asn Ala Leu Ala Phe Pro Ile
 785 790 795 800
 Gly Asp Ile Ala Tyr Asp His Pro Asp Ala Ala Leu Thr Val Ala
 805 810 815
 Ala Glu Ile Leu Asp Asn Val Val Leu His Thr Lys Ile Arg Glu Gln
 820 825 830
 Gly Gly Ala Tyr Gly Ser Gly Ala Ala Ala Asn Leu Ser Arg Gly Ser
 835 840 845
 Phe Tyr Cys Tyr Ser Tyr Arg Asp Pro Glu Ile Ala Thr Thr Tyr Lys
 850 855 860
 Thr Phe Leu Lys Gly Val Ser Glu Ile Ala Ser Gly Asn Phe Thr Lys
 865 870 875 880
 Glu Asp Ile Tyr Glu Gly Ala Leu Gly Val Val Gln Gly Leu Asp Met
 885 890 895
 Pro Val Ala Pro Gly Ser Arg Ala Ser Val Ala Phe Tyr Arg Leu Lys
 900 905 910
 Ser Gly Arg Ile Pro Val Leu Arg Gln Ala Phe Arg Arg Ser Val Leu
 915 920 925
 Glu Val Thr Lys Glu His Ile Cys Met Val Met Asp Lys Tyr Leu Glu
 930 935 940
 Ser Thr Val Gln Glu Thr Thr Leu Ile Ser Phe Ala Gly Glu Glu Met
 945 950 955 960
 Leu Arg Asn Asn Val Leu Thr Leu Asp Lys Asp Phe Pro Ile Val Pro
 965 970 975
 Ala Ile

<210>1056

<211>418

<212>PRT

<213>Chlamydia pneumoniae

<400>1056

Lys Lys Glu Leu Ala Ser Val Met Asn Leu Pro Val Ser Leu Ala Cys
 1 5 10 15
 Leu Leu Leu Ser Gly Cys Val Phe Phe Leu Gly Val Phe Val Ser Ser
 20 25 30
 Ser Leu Tyr Ala Arg Lys Lys Arg Ala Phe Leu Glu Lys Ile Gln Lys
 35 40 45
 Leu Glu His Glu Asn Gln Leu Leu Gln Thr Ser Leu Asn Leu Ser Arg
 50 55 60
 His Gln Glu Gln Leu Ile Glu Asp Phe Ser Asn Arg Leu Ala Leu Ser
 65 70 75 80
 Ser His Lys Leu Ile Lys Asp Met Lys Glu Glu Ala Gln Asn Tyr Phe
 85 90 95
 Gly Asp Thr Ser Lys Ser Phe Gln Ser Ile Leu Ser Pro Ile Gln Thr
 100 105 110
 Thr Leu Thr Thr Phe Lys Gln Ser Leu Glu Thr Phe Glu Thr Lys His
 115 120 125
 Ala Glu Asp Arg Gly Arg Leu Lys Glu Gln Ile Ser Gln Leu Leu Ala
 130 135 140
 Val Glu Lys Lys Leu Glu His Glu Thr His Val Leu Thr Asp Ile Leu
 145 150 155 160
 Lys His Pro Gly Ser Arg Gly Arg Trp Gly Glu Ile Gln Leu Glu Arg
 165 170 175
 Ile Leu Glu Leu Ala Gly Met Leu Lys Tyr Cys Asp Tyr Asp Ser Gln
 180 185 190
 Thr Thr Ser Ala Gln Gly Ala Phe Arg Ala Asp Ile Ile Ile Arg Leu
 195 200 205
 Pro Gln Asp Arg Cys Leu Ile Ile Asp Ala Lys Ala Pro Ile Ser Asp
 210 215 220

Ser Tyr Phe Ser Val Glu Glu Ile Asp Lys Gly Asp Leu Val Asp Lys
 225 230 235 240
 Ile Lys Glu His Ile Lys Thr Leu Lys Ser Lys Ser Tyr Trp Glu Lys
 245 250 255
 Phe His Gln Ser Pro Glu Tyr Val Ile Leu Phe Leu Pro Gly Glu Ser
 260 265 270
 Leu Phe Asn Asp Ala Ile Arg Leu Ala Pro Glu Leu Met Glu Ile Gly
 275 280 285
 Ala Ser Ser Asn Val Ile Leu Ser Ser Pro Leu Thr Leu Leu Ala Leu
 290 295 300
 Leu Lys Thr Ile Ala Tyr Met Trp Lys Gln Glu Asn Leu Gln Lys Gln
 305 310 315 320
 Ile Gln Glu Val Ser Leu Leu Gly Lys Glu Leu His Arg Arg Leu Gln
 325 330 335
 Val Val Phe Thr His Phe Gln Lys Ile Gly Lys Asn Leu Asn Gln Thr
 340 345 350
 Val Gln Ser Tyr Asn Asp Met Thr Ser Ser Phe Gln Tyr Arg Val Leu
 355 360 365
 Pro Thr Leu Arg Lys Phe Glu Gly Leu Glu Thr Ser Ser Ser His Gln
 370 375 380
 Ile Glu Glu Pro Thr Pro Ile Glu Ser Leu Ala Thr Ser Phe Pro His
 385 390 395 400
 Thr Cys Asp Ile Asp Thr Asn Leu Ala Val Ile Glu Ser Leu Glu Lys
 405 410 415
 Gln Asp

<210>1057

<211>265

<212>PRT

<213>Chlamydia pneumoniae

<400>1057

Met Ala Gly Leu Asp Leu Glu Ala Arg Gly Lys Arg Arg Val Val Thr
 1 5 10 15
 Pro Asn Ala Ile Thr Ala Phe Gly Leu Cys Cys Gly Leu Phe Ile Ile
 20 25 30
 Phe Lys Ser Val Leu Arg Thr Ser Ser Ser Val Glu Leu Phe His Arg
 35 40 45
 Leu Gln Gly Leu Ser Leu Leu Ile Ser Ala Met Ile Ala Asp Phe
 50 55 60
 Ser Asp Gly Ala Ile Ala Arg Ile Met Lys Ala Glu Ser Ala Phe Gly
 65 70 75 80
 Ala Gln Phe Asp Ser Leu Ser Asp Ala Val Thr Phe Gly Ile Ala Pro
 85 90 95
 Pro Leu Ile Ala Ile Lys Ser Leu Asp Gly Ile Tyr Val Gly Asn Phe
 100 105 110
 Phe Ser Ser Leu Leu Leu Ile Thr Ser Ile Ile Tyr Ser Leu Cys Gly
 115 120 125
 Val Leu Arg Leu Val Arg Tyr Asn Leu Phe Ser Gln Lys Thr Val Asp
 130 135 140
 Val Ser Lys Pro Tyr Cys Phe Ile Gly Leu Pro Ile Pro Ala Ala Ala
 145 150 155 160
 Ala Ser Ile Val Ser Leu Ala Leu Phe Leu Ala Ser Asp Phe Phe Pro
 165 170 175
 Asp Leu Pro Ala Gln Leu Arg Val Gly Leu Leu Ser Phe Ala Leu Leu
 180 185 190
 Phe Ile Gly Gly Leu Met Ile Ser Pro Trp Lys Phe Pro Gly Val Lys
 195 200 205
 His Phe Arg Phe Asn Val Ser Ser Phe Leu Leu Val Thr Ile Gly
 210 215 220
 Leu Ala Ala Cys Leu Phe Ser Gly Leu Val Asp His Phe Val Glu
 225 230 235 240
 Val Phe Phe Leu Val Ser Trp Leu Tyr Thr Leu Val Gly Phe Pro Ile
 245 250 255
 Phe Ser Ile Ile Tyr Arg Lys Lys Ser

260 265

<210>1058
 <211>1047
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1058

Gly Lys Val Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys
 1 5 10 15
 Arg Asn Gly Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala
 20 25 30
 Leu Glu Ala Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro
 35 40 45
 Leu Pro Lys Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val
 50 55 60
 Val Lys Glu Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val
 65 70 75 80
 Glu Arg Ile Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu
 85 90 95
 Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala
 100 105 110
 Glu Arg Gly Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly
 115 120 125
 Gly Ser Ala Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys
 130 135 140
 Ala Phe Arg Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr
 145 150 155 160
 Leu Ser Glu Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu
 165 170 175
 Ser Leu His Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile
 180 185 190
 Val Glu Lys Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn
 195 200 205
 Tyr Ile Leu Tyr Arg Glu Ala Arg Ala Arg Ala Arg Ala Asn Lys Asp
 210 215 220
 Gln Asp Gly Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val
 225 230 235 240
 Gln Lys Glu Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu
 245 250 255
 Lys Arg Phe Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser
 260 265 270
 Gln Leu Leu Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys
 275 280 285
 Glu Asp Glu Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile
 290 295 300
 Glu Arg Glu Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser
 305 310 315 320
 Ser Leu Tyr Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu
 325 330 335
 Ser Glu Ile His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu
 340 345 350
 Glu Tyr Arg Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu
 355 360 365
 Ser Glu Val Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly
 370 375 380
 Val Gln Asn Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg
 385 390 395 400
 Leu Glu Thr Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala
 405 410 415
 Leu Asn Glu Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn
 420 425 430
 Leu Leu Ser Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn
 435 440 445
 Ser Gly Met Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val
 450 455 460

Lys	Asp	Asp	Leu	Ser	His	Ile	Tyr	Lys	Val	Ile	Ser	Asp	Asn	Ala	Leu	465	470	475	480
Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp	Trp	Thr	Asp	Val	Arg	485	490	495	
Ala	Thr	Gly	Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	500	505	510	
Ile	Pro	Phe	Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	515	520	525	
Gly	Gly	Lys	Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	530	535	540	
Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	545	550	555	560
Arg	Arg	Arg	Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	565	570	575	
Phe	Phe	Lys	Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	580	585	590	
Asp	Asp	Val	Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	595	600	605	
Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	610	615	620	
Tyr	Lys	Lys	Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	625	630	635	640
Leu	Tyr	Glu	Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	645	650	655	
Ile	Arg	Ser	Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	660	665	670	
Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	675	680	685	
Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	690	695	700	
Asp	Glu	Glu	Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	705	710	715	720
Asp	Asn	Val	Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	725	730	735	
Ala	Asn	Leu	Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	740	745	750	
Asp	Val	Leu	Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	755	760	765	
Glu	Phe	Ser	Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	770	775	780	
Ala	Ser	Ser	Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	785	790	795	800
Gly	Ser	Lys	Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	805	810	815	
Leu	Lys	Glu	Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	820	825	830	
Lys	Lys	Asp	Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	835	840	845	
Arg	Asn	Ser	Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	850	855	860	
Ile	Ile	Gly	Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	865	870	875	880
Val	Lys	Ser	Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	885	890	895	
Ile	Lys	Lys	Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	900	905	910	
Asp	Leu	Lys	Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	915	920	925	
Asn	His	Leu	Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	930	935	940	
Trp	Ile	Ile	Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	945	950	955	960
Val	Ser	Leu	Asn	Leu	Tyr	Leu	Ala	Glu	Pro	Asp	Gly	Lys	Lys	Leu	Ser	965	970	975	

Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr
 980 985 990
 Leu Arg Ser Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile
 995 1000 1005
 Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser
 1010 1015 1020
 Thr Ser Ile Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu
 1025 1030 1035 1040
 Glu Gly Cys Glu Ser Cys Gln
 1045

<210>1059

<211>365

<212>PRT

<213>Chlamydia pneumoniae

<400>1059

Leu Phe Asn Gly Arg Arg Leu Arg Ile Leu Ser Ile Thr Glu Lys Arg
 1 5 10 15
 Gly Ala Lys Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val
 20 25 30
 Glu Val Ser Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn
 35 40 45
 Gln Leu Val Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn
 50 55 60
 Gly Cys Ala Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp
 65 70 75 80
 Ile Glu Leu Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val
 85 90 95
 Ile Leu Leu Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly
 100 105 110
 Asn Asn Ile Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala
 115 120 125
 Arg Gln Tyr Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His
 130 135 140
 Thr Phe Leu Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val
 145 150 155 160
 Phe Asn Ala Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe
 165 170 175
 Gln Met Thr Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln
 180 185 190
 Ser Ser Glu Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr
 195 200 205
 Ile Ile Met Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu
 210 215 220
 Ser Phe His Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln
 225 230 235 240
 Tyr Ile Leu Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu
 245 250 255
 Ile Asn Gly Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu
 260 265 270
 Gln Glu Glu Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile
 275 280 285
 Glu Tyr Ala Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser
 290 295 300
 Ser Met Phe Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu
 305 310 315 320
 Arg Ile Gly Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp
 325 330 335
 Met Ser Glu Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr
 340 345 350
 Arg Val Thr Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
 355 360 365

<210>1060

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>1060

Phe Leu Leu Phe Met Lys Pro Gln Asp Leu Ser Pro Pro Phe Leu Trp
 1 5 10 15
 Lys Glu Arg Arg Pro Cys Ile Gln Asp Gly Val Leu Tyr Val Pro Arg
 20 25 30
 His Tyr Phe Glu His Gln Asn Phe Ser Thr Ser Tyr His Gln Glu Phe
 35 40 45
 Phe Gln Asn His Thr Ser Ile Ala Cys Glu Leu Cys Ser Gly Asn Gly
 50 55 60
 Asp Trp Val Val Ala Gln Ala Gln Lys Asp Pro Gln Val Leu Trp Ile
 65 70 75 80
 Ala Val Glu Gln Arg Phe Asp Arg Val Arg Lys Ile Trp Ser Lys Met
 85 90 95
 Ile Asn His Gln Ile Gln Asn Leu Arg Ile Val Cys Gly Thr Ala Glu
 100 105 110
 Thr Phe Phe Gln Tyr Tyr Val Pro Asp Gln Phe Leu Gln Arg Leu Val
 115 120 125
 Val Asn Phe Pro Asp Pro Trp Pro Lys Met Arg His Arg Lys His Arg
 130 135 140
 Leu Leu Gln Pro Ser Phe Val Gln Glu Ile Ser Arg Ser Leu Gln Asp
 145 150 155 160
 Ser Ala Val Phe Ala Leu Ala Thr Asp Asp Lys Thr Tyr Leu Leu Glu
 165 170 175
 Ser Ile Glu Ala Leu Gln Thr His Leu Ala Pro Arg Met Glu Thr Pro
 180 185 190
 Tyr Tyr Ile Lys Met Thr Asp Thr Tyr Gly Asn Ser Trp Phe Glu Asn
 195 200 205
 Leu Trp Arg Thr Lys Gly Gln Glu Ile Phe Tyr Thr Glu Phe Ile Lys
 210 215 220
 Lys Ala Gly Ile
 225

<210>1061

<211>175

<212>PRT

<213>Chlamydia pneumoniae

<400>1061

Met Phe Ala Tyr Arg Thr Leu Leu Thr His Asn Val Val Gln Val Ser
 1 5 10 15
 His Glu Ile Phe Lys Thr Thr Val Val Pro Gly Asp Thr Val Ile Asp
 20 25 30
 Ala Thr Cys Gly Asn Gly Asn Asp Ser Leu Phe Leu Ala Arg Leu Leu
 35 40 45
 Gln Gly Glu Gly Arg Leu Val Val Tyr Asp Ile Gln Lys Glu Ala Leu
 50 55 60
 Ser Asn Ala Leu Leu Leu Phe Glu Thr His Leu Ser Glu Gln Glu Arg
 65 70 75 80
 Ser Val Ile Glu Met Lys Glu Gln Ser His Glu His Ile Leu Glu Lys
 85 90 95
 Asp Val Lys Leu Ile His Tyr Asn Leu Gly Tyr Leu Pro Lys Gly Asn
 100 105 110
 Lys Glu Ile Thr Thr Leu Ala Arg Thr Thr Glu Ile Ser Leu Glu Tyr
 115 120 125
 Ala Leu Asn Ile Val Arg Pro Asp Gly Leu Ile Thr Val Val Cys Tyr
 130 135 140
 Pro Gly His Pro Glu Gly Glu Lys Glu Thr His Ser Val Glu Ser Leu
 145 150 155 160
 Ala Gln Arg Leu His Pro Lys Glu Trp Cys Val Ser His Phe Met
 165 170 175

<210>1062

<211>97

<212>PRT

<213>Chlamydia pneumoniae

<400>1062

Arg Ser Pro Ile Arg Ser Leu Leu Leu Ala Val Phe Ser Val Ile Leu
 1 5 10 15
 Lys Glu Leu Leu Leu Ala Ser Leu Leu Thr Gln Pro Gly Leu Lys Gly
 20 25 30
 Leu Ala Ile Gly Gly Ala Gln Ile Ser Pro Leu His Ala Asn Phe Ile
 35 40 45
 Ile Asn Thr Gly Lys Ala Thr Ser Asp Glu Val Lys Gln Leu Ile Ala
 50 55 60
 Ile Ile Gln Ser Thr Leu Lys Thr Gln Gly Ile Asp Leu Glu His Glu
 65 70 75 80
 Ile Arg Ile Ile Pro Tyr Gln Pro Lys Ile His Ser Pro Val Ser Glu
 85 90 95
 Lys

<210>1063

<211>263

<212>PRT

<213>Chlamydia pneumoniae

<400>1063

Met Lys Glu Ala Ala Pro Met His Phe Pro Phe Pro Val Arg Arg Ser
 1 5 10 15
 Val Trp Leu Asn Arg Tyr Ser Thr Phe Arg Ile Gly Gly Pro Ala Asn
 20 25 30
 Tyr Phe Lys Ala Ile His Thr Ile Glu Glu Ala Arg Glu Val Ile Arg
 35 40 45
 Phe Leu His Ser Ile Asn Tyr Pro Phe Leu Ile Ile Gly Lys Gly Ser
 50 55 60
 Asn Cys Leu Phe Asp Asp Arg Gly Phe Asp Gly Phe Val Leu Tyr Asn
 65 70 75 80
 Ala Ile Tyr Gly Lys Gln Phe Leu Glu Asp Ala Arg Ile Lys Ala Tyr
 85 90 95
 Ser Gly Leu Ser Phe Ala Ala Leu Gly Lys Ala Thr Ala Tyr Asn Gly
 100 105 110
 Tyr Ser Gly Leu Glu Phe Ala Ala Gly Ile Pro Gly Ser Val Gly Gly
 115 120 125
 Ala Ile Phe Met Asn Ala Gly Thr Asn Glu Ser Asp Ile Ser Ser Val
 130 135 140
 Val Arg Asn Val Glu Thr Ile Asn Ser Glu Gly Glu Leu Cys Ser Tyr
 145 150 155 160
 Ser Val Glu Glu Leu Glu Leu Ser Tyr Arg Ser Ser Arg Phe His Arg
 165 170 175
 Gln Gln Glu Phe Ile Leu Ser Ala Thr Phe Gln Leu Ser Lys Lys Gln
 180 185 190
 Val Ser Ala Asp His Ser Lys Ser Ile Leu Gln His Arg Leu Met Thr
 195 200 205
 Gln Pro Tyr Thr Gln Pro Ser Ala Gly Cys Ile Phe Arg Asn Pro Glu
 210 215 220
 Gly Thr Ser Ala Gly Lys Leu Ile Asp Ala Ala Trp Val Glu Gly Ile
 225 230 235 240
 Ser Asn Arg Arg Gly Thr Asn Phe Ser Val Ala Cys Lys Leu His Tyr
 245 250 255
 Gln Tyr Trp Gln Gly His Phe
 260

<210>1064

<211>179

<212>PRT

<213>Chlamydia pneumoniae

<400>1064

Leu Arg Thr Ser Leu Ala Val Lys Cys Val Leu Leu Thr Ile Phe Trp
 1 5 10 15
 Leu Leu Val Met Ala Thr Leu Ser Pro Glu Lys Phe Ser Gly Ser Pro
 20 25 30
 Ile Ser Ile Ser Lys Glu Phe Pro Gln Gln Lys Met Arg Glu Ile Ile
 35 40 45

Leu Gln Met Leu Tyr Ala Leu Asp Met Ala Pro Ser Ala Glu Asp Ser
 50 55 60
 Leu Val Pro Leu Leu Met Ser Gln Thr Ala Val Ser Gln Lys His Val
 65 70 75 80
 Leu Val Ala Leu Asn Gln Thr Lys Ser Ile Leu Glu Lys Ser Gln Glu
 85 90 95
 Leu Asp Leu Ile Ile Gly Asn Ala Leu Lys Asn Lys Ser Phe Asp Ser
 100 105 110
 Leu Asp Leu Val Glu Lys Asn Val Leu Arg Leu Thr Leu Phe Glu His
 115 120 125
 Phe Tyr Ser Pro Pro Ile Asn Lys Ala Ile Leu Ile Ala Glu Ala Ile
 130 135 140
 Arg Leu Val Lys Lys Phe Ser Tyr Ser Glu Ala Cys Pro Phe Ile Gln
 145 150 155 160
 Ala Ile Leu Asn Asp Ile Phe Thr Asp Ser Ser Leu Asn Glu Asn Ser
 165 170 175
 Leu Ser Ile

<210>1065

<211>187

<212>PRT

<213>Chlamydia pneumoniae

<400>1065

Ser Val Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys
 1 5 10 15
 Val Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile
 20 25 30
 Lys Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu
 35 40 45
 Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly
 50 55 60
 Lys Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala
 65 70 75 80
 Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp
 85 90 95
 Glu Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu
 100 105 110
 Lys Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu
 115 120 125
 Ala Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly
 130 135 140
 Leu Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg
 145 150 155 160
 Ser Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys
 165 170 175
 Gln Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210>1066

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>1066

Met Val Arg Ala Thr Gly Ser Val Ala Ser Arg Arg Arg Arg Lys Arg
 1 5 10 15
 Ile Leu Lys Gln Ala Lys Gly Phe Trp Gly Asp Arg Lys Gly His Ile
 20 25 30
 Arg Gln Ser Arg Ser Ser Val Met Arg Ala Met Ala Phe Asn Tyr Met
 35 40 45
 His Arg Lys Asp Arg Lys Gly Asp Phe Arg Ser Leu Trp Ile Ala Arg
 50 55 60
 Leu Asn Val Ala Ser Arg Ile His Ser Leu Ser Tyr Ser Arg Leu Ile
 65 70 75 80
 Asn Gly Leu Lys Cys Ala Asn Ile Ser Leu Asn Arg Lys Met Leu Ser
 85 90 95

Glu Ile Ala Ile His Asn Pro Glu Gly Phe Ala Glu Ile Ala Asn Gln
 100 105 110
 Ala Lys Lys Ala Leu Glu Ala Thr Val
 115 120

<210>1067

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1067

Met Glu Met Lys Glu Glu Ile Glu Ala Val Lys Gln Gln Phe His Ser
 1 5 10 15
 Glu Leu Asp Gln Val Asn Ser Ser Gln Ala Leu Ala Asp Leu Lys Val
 20 25 30
 Arg Tyr Leu Gly Lys Lys Gly Ile Phe Arg Ser Phe Ser Glu Lys Leu
 35 40 45
 Lys Gln Cys Thr Asp Lys Ala Lys Leu Gly Ser Leu Ile Asn Asp Phe
 50 55 60
 Lys Thr Tyr Val Glu Asp Leu Leu Gln Glu Lys Ser Leu Val Leu Leu
 65 70 75 80
 Ala Ser Glu Gln Ala Glu Ala Phe Ser Lys Glu Lys Ile Asp Ser Ser
 85 90 95
 Leu Pro Gly Asp Ser Gln Pro Ser Gly Gly Arg His Ile Leu Lys Ser
 100 105 110
 Ile Leu Asp Asp Val Val Asp Ile Phe Val His Leu Gly Phe Cys Val
 115 120 125
 Arg Glu Ala Pro Asn Ile Glu Ser Glu Ala Asn Asn Phe Thr Leu Leu
 130 135 140
 Asn Phe Thr Glu Asp His Pro Ala Arg Gln Met His Asp Thr Phe Tyr
 145 150 155 160
 Leu Asn Ala Thr Thr Val Leu Arg Thr His Thr Ser Asn Val Gln Ala
 165 170 175
 Arg Glu Leu Lys Lys Gln Gln Pro Pro Ile Lys Val Val Ala Pro Gly
 180 185 190
 Leu Cys Phe Arg Asn Glu Asp Ile Ser Ala Arg Ser His Val Leu Phe
 195 200 205
 His Gln Val Glu Ala Phe Tyr Val Asp His Asn Val Thr Phe Ser Asp
 210 215 220
 Leu Thr Ala Ile Leu Ser Ala Phe Tyr His Ser Phe Phe Gln Arg Lys
 225 230 235 240
 Thr Glu Leu Arg Phe Arg His Ser Tyr Phe Pro Phe Val Glu Pro Gly
 245 250 255
 Ile Glu Val Asp Val Ser Cys Glu Cys Cys Gly Lys Gly Cys Ala Leu
 260 265 270
 Cys Lys His Thr Gly Trp Leu Glu Val Ala Gly Ala Gly Met Ile His
 275 280 285
 Pro Gln Val Leu Arg Asn Gly Asn Val Asp Pro Glu Ile Tyr Ser Gly
 290 295 300
 Tyr Ala Val Gly Met Gly Ile Glu Arg Leu Ala Met Leu Lys Tyr Gly
 305 310 315 320
 Val Ser Asp Ile Arg Leu Phe Ser Glu Asn Asp Leu Arg Phe Leu Gln
 325 330 335
 Gln Phe Ser

<210>1068

<211>690

<212>PRT

<213>Chlamydia pneumoniae

<400>1068

Leu Phe Trp Phe His Arg Gly Gly Arg Met Lys Arg Ser Arg Arg Asn
 1 5 10 15
 Phe Glu Gln Ala Leu Glu Asn Leu Glu Lys Leu Lys Glu Ile Ser Leu
 20 25 30
 Ala Thr Ser Asn Asp Ser Tyr Leu Asn Asn Pro Ala Arg Phe Asn Gln
 35 40 45

Arg Lys Gln Thr Gly Ser Ser Val Met Glu Met Lys Glu Ala Leu Lys
 50 55 60
 Asn Val Glu Asn Tyr Leu Leu Glu Ile Ser Cys Val Ser Lys Ser His
 65 70 75 80
 Ala Asp Lys Ala Leu Lys Glu Ser Asp Phe Leu Ile Ala Gly Val Gln
 85 90 95
 Asn Val Phe Ser Phe Leu Glu Asn Gln Glu Asp Leu Tyr Lys Ser Leu
 100 105 110
 Leu Asp Glu Tyr Ser Glu Val Thr Lys Ala Tyr Asp Glu Val Lys Lys
 115 120 125
 Asn Leu Lys Glu Val Pro Thr Tyr Asp Leu Ser Thr Asp Glu Glu Thr
 130 135 140
 Glu Glu His Lys Glu Pro Glu Cys Phe Leu Asn Asn Leu Val Glu Val
 145 150 155 160
 Lys Arg Asp Arg Ser Tyr Glu Leu Phe Tyr Met Leu Asp Glu Gln Asp
 165 170 175
 Lys Arg Phe Tyr Asn Asp Ala Leu Val Gln Ile Ile Tyr Lys Gln Asn
 180 185 190
 Lys Leu His Glu Thr Val Asn Glu Gly Asp Pro Leu Thr Lys Thr Leu
 195 200 205
 Leu Trp Asn Ser Glu Glu Val Lys Asn Ile Ala Ser Ser Leu Val Ile
 210 215 220
 Val Asn Asp Met Pro Leu Arg Leu Phe Tyr Gln Arg Ala Leu Ser His
 225 230 235 240
 Leu Asp Ile Glu Ala Val Val Lys Val His Asn Ala Val Met Ala Leu
 245 250 255
 Phe Phe Ser Arg Tyr Glu Ala Thr Met Val Phe Lys Ser Pro Lys Lys
 260 265 270
 His Asn Ile Trp Tyr Phe Asn Asp Phe Leu Leu Phe Leu Arg Glu Ala
 275 280 285
 Trp Lys Asp Leu Asn Asn Asn Val Ile Asp Ser Gln Glu Arg Lys Gln
 290 295 300
 Thr Lys Leu Leu Ala Ser Ala Leu Ser Leu Gly Ile Phe Glu Ser Lys
 305 310 315 320
 Leu Val Phe Glu Glu Ala Ser Arg Tyr Leu Tyr Phe Asn Ile Gln Thr
 325 330 335
 Lys Leu Glu Asn Ala Asn Gly Lys Lys Pro Leu Ser Pro Gly Gln Tyr
 340 345 350
 Leu Thr Asp Ala Tyr Glu Glu Leu His Arg Leu Ile Ser Lys Tyr Pro
 355 360 365
 Asn Gly Pro Leu Phe Lys Ala Met Asp Arg Val Leu Glu His Glu Ser
 370 375 380
 Arg Pro Tyr Asp Pro Met Ile Leu Gly Ile Leu Pro Ser Leu Glu Gly
 385 390 395 400
 Thr Leu Lys Leu His Gly Lys Ser Ile Asp Ile Ile Arg Ser Pro Ser
 405 410 415
 Pro Val Thr Gln Ser Ser Ile Leu Tyr Ala Asn Cys Asn Glu Glu Phe
 420 425 430
 Leu Gly Phe Leu Asn Ala Lys Ala His Arg Ser Glu Val Thr Leu Val
 435 440 445
 Leu Asn Ile Gln Asn Arg Ile Ser Arg Lys Glu Arg Ala Arg Ser Arg
 450 455 460
 Val Ile Glu Glu Ala Leu Glu Gln Glu Glu His Ala Pro Tyr Val His
 465 470 475 480
 Ala Phe Ser Phe Pro Glu Pro Glu Glu Leu Leu Gln Asn Leu Glu Ser
 485 490 495
 Ile His Gly Asp Ile Glu Thr Phe Ala Asp Phe Phe Ser Ile Leu Gln
 500 505 510
 Glu Glu Phe His Lys Pro Leu Leu Ala Ser Ser Phe Phe Leu Thr Lys
 515 520 525
 Glu Leu Lys Glu Phe Val Gly Ser Phe Leu Lys Glu Lys Leu Thr Ala
 530 535 540
 Leu Lys Asp Ile Phe Phe Ala Lys Lys Lys Ile Leu Phe Arg Asn Asp
 545 550 555 560

Lys Leu Leu Leu Leu His Leu Leu Ser Tyr Leu Ile Val Phe Lys Leu
 565 570 575
 Ile Glu Arg Thr Asn Pro Asn Ser Ile Val Val Val Ser Lys Asp Gly
 580 585 590
 Leu Asp Tyr Val Ser Val Phe Ile Ala Gly Phe Ala Phe Phe Ser Arg
 595 600 605
 Glu Ala Phe Trp Asp Glu His Ser Leu Lys Leu Leu Leu Thr Asn Val
 610 615 620
 Leu Ser Pro Thr Leu Val Ala Arg Asp Arg Leu Val Phe Val Ser His
 625 630 635 640
 Ile Glu Leu Leu Ser Lys Phe Val Asn Cys Leu Lys Lys Asn Arg Gln
 645 650 655
 Gly Phe Ser Ser Leu Lys Ser Phe Phe Lys Asp Asp Ile Glu Gly Trp
 660 665 670
 Glu Phe Thr Gly Tyr Leu His Glu Leu Thr Glu Val Ser His Lys His
 675 680 685
 Asn Leu
 690
 <210>1069
 <211>367
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1069
 Arg Met Leu Ile Trp Lys Arg His Leu Leu Thr Arg Phe Trp Phe Ala
 1 5 10 15
 Leu Thr Ser Leu Val Leu Ala Leu Ile Phe Tyr Ala Ser Ile His
 20 25 30
 His Ser Leu His Thr Leu Lys Gly Ala Ser Thr Ala Ala Ser Gly Ala
 35 40 45
 Ser Val Lys Leu Ser Ile Leu Tyr Tyr Leu Ala Gln Ile Ser Leu Lys
 50 55 60
 Ala Glu Phe Leu Met Pro Gln Leu Val Ala Val Ala Thr Thr Ser Thr
 65 70 75 80
 Leu Phe Ala Met Gln Asn Lys Arg Glu Ile Ile Leu Leu Gln Ala Ser
 85 90 95
 Gly Leu Ser Leu Lys Ser Leu Met His Pro Leu Leu Leu Ser Gly Ala
 100 105 110
 Val Ile Met Met Val Leu Tyr Ala Asn Phe Gln Trp Leu His Pro Ile
 115 120 125
 Cys Glu Lys Ile Ser Ile Thr Lys Glu Asn Met Asp Arg Gly Thr Thr
 130 135 140
 Asp Lys Glu Gln Gly Lys Ile Pro Ala Leu Tyr Leu Lys Asp Gln Thr
 145 150 155 160
 Val Leu Leu Tyr Ser Ser Ile Glu Pro Lys Thr Leu Thr Leu Asn Asn
 165 170 175
 Val Phe Trp Ile Lys Asp Pro Lys Thr Ile Tyr Thr Met Glu Lys Leu
 180 185 190
 Ala Phe Thr Thr Leu Ser Leu Pro Ile Gly Leu Asn Val Thr Gln Phe
 195 200 205
 Phe Ala Asn Asp Ser Glu Asn Leu Glu Leu Lys Glu Phe Phe Asp Met
 210 215 220
 Lys Glu Phe Pro Glu Ile Glu Phe Asn Phe Tyr Glu Asn Pro Phe Ser
 225 230 235 240
 Lys Leu Phe Ser Ala Gly Asn Lys Asn Arg Leu Ser Glu Phe Phe Lys
 245 250 255
 Ala Ile Pro Trp Asn Ala Thr Gly Leu Gly Leu Ser Thr Gln Val Pro
 260 265 270
 Gln Arg Ile Leu Ser Leu Leu Ala Gln Phe Tyr Tyr Val Leu Ile Ser
 275 280 285
 Pro Leu Ala Cys Met Ala Ala Ile Ile Leu Ser Ala Tyr Leu Cys Leu
 290 295 300
 Arg Phe Ser Arg Thr Pro Thr Val Thr Leu Ala Tyr Leu Ile Pro Leu
 305 310 315 320
 Gly Thr Val Asn Ile Phe Phe Val Phe Leu Lys Ala Gly Ile Val Leu

325 330 335
 Ala Ser Ser Ser Val Leu Pro Thr Leu Pro Val Met Ala Phe Pro Leu
 340 345 350
 Ile Val Leu Phe Leu Leu Thr Asn Tyr Ala Tyr Ala Lys Leu Gln
 355 360 365

<210>1070

<211>358

<212>PRT

<213>Chlamydia pneumoniae

<400>1070

Ala Met Pro Ile Leu Trp Lys Val Leu Ile Phe Arg Tyr Leu Lys Thr
 1 5 10 15
 Ala Ala Phe Cys Thr Leu Ser Leu Ile Cys Ile Ser Ile Ile Ser Ser
 20 25 30
 Leu Gln Glu Ile Val Ala Tyr Ile Ala Lys Asp Val Pro Tyr Asp Thr
 35 40 45
 Val Leu Arg Leu Met Ala Tyr Gln Ile Pro Tyr Leu Leu Pro Phe Ile
 50 55 60
 Leu Pro Gly Ser Cys Phe Val Ser Ala Phe Ser Leu Phe Arg Lys Leu
 65 70 75 80
 Ser Asp Asn Asn His Met Thr Phe Leu Arg Ala Ser Gly Ala Ser Gln
 85 90 95
 Ser Ile Ile Met Phe Pro Val Leu Met Val Ser Gly Ala Ile Cys Cys
 100 105 110
 Leu Asn Phe Tyr Thr Cys Ser Glu Leu Ala Ser Ile Cys Arg Tyr Gln
 115 120 125
 Thr Cys Lys Glu Ile Ala Asn Met Ala Met Thr Ser Pro Ala Leu Leu
 130 135 140
 Leu Gln Thr Leu Gln Lys Lys Glu Asn Asn Arg Ile Phe Ile Ala Val
 145 150 155 160
 Asp His Cys Ala Lys Ser Lys Phe Asp Asn Val Ile Val Ala Leu Lys
 165 170 175
 Gly Asn Asn Glu Ile Ser His Val Gly Ile Ile Lys Ser Ile Ile Pro
 180 185 190
 Asp Thr Thr Lys Asp Thr Val Lys Ala Lys Asp Val Val Phe Ile Ser
 195 200 205
 Lys Leu Pro Asp Ser Leu Thr Glu Ser Ser Ser Pro Ser Ser Gln Arg
 210 215 220
 Phe Tyr Ile Glu Thr Leu Asp Glu Leu Leu Ile Pro Lys Ile Thr Ser
 225 230 235 240
 Thr Leu Phe Ala Gly Lys Ser Tyr Leu Lys Thr Arg Thr Asp Tyr Leu
 245 250 255
 Pro Trp Lys Gln Leu Val Lys Gln Ser Leu Lys His Ser His Leu Pro
 260 265 270
 Glu Thr Leu Arg Arg Val Ala Ile Gly Phe Leu Cys Ile Thr Leu Thr
 275 280 285
 Tyr Ala Gly Met Ile Leu Gly Ile His Lys Pro Arg Phe Arg Lys Ser
 290 295 300
 Ile Ala Leu Tyr Phe Ile Phe Pro Ile Leu Asp Leu Ile Leu Leu Ile
 305 310 315 320
 Val Gly Lys Asn Thr Lys Asn Leu Pro Leu Ala Phe Met Leu Phe Val
 325 330 335
 Phe Pro Gln Leu Val Ser Trp Val Val Phe Ala Ala Arg Ala Tyr Arg
 340 345 350
 Glu Ser Arg Gly Tyr Ala
 355

<210>1071

<211>319

<212>PRT

<213>Chlamydia pneumoniae

<400>1071

Met Val Leu Ser Ser Asp Leu Leu Arg Asp Asp Lys Gln Leu Asp Leu
 1 5 10 15
 Phe Phe Ala Ser Leu Asp Val Lys Lys Arg Tyr Leu Leu Ala Leu Ser

20 25
 Gly Gly Ser Asp Ser Leu Phe Leu Phe Tyr Leu Leu Lys Glu Arg Gly
 35 40 45
 Val Ser Phe Thr Ala Val His Ile Asp His Gly Trp Arg Ser Thr Ser
 50 55 60
 Ala Gln Glu Ala Lys Glu Leu Glu Glu Leu Cys Ala Arg Glu Gly Val
 65 70 75 80
 Pro Phe Val Leu Tyr Thr Leu Thr Ala Glu Gln Gly Asp Lys Asp
 85 90 95
 Leu Glu Asn Gln Ala Arg Lys Lys Arg Tyr Ala Phe Leu Tyr Glu Ser
 100 105 110
 Tyr Arg Gln Leu Asp Ala Gly Gly Ile Phe Leu Ala His His Ala Asn
 115 120 125
 Asp Gln Ala Glu Thr Val Leu Lys Arg Leu Leu Glu Ser Ala His Leu
 130 135 140
 Thr Asn Leu Lys Ala Met Ala Glu Arg Ser Tyr Val Glu Asp Val Leu
 145 150 155 160
 Leu Leu Arg Pro Leu Leu His Ile Pro Lys Ser Ser Leu Lys Glu Ala
 165 170 175
 Leu Asp Ala Arg Gly Ile Ser Tyr Leu Gln Asp Pro Ser Asn Glu Asp
 180 185 190
 Glu Arg Tyr Leu Arg Ala Arg Met Arg Lys Lys Leu Phe Pro Trp Leu
 195 200 205
 Glu Glu Val Phe Gly Lys Asn Ile Thr Phe Pro Leu Leu Thr Leu Gly
 210 215 220
 Glu Glu Ser Ala Glu Leu Ser Glu Tyr Leu Glu Lys Gln Ala Gln Pro
 225 230 235 240
 Phe Phe Ser Ala Ala Thr His Gln Asp Ser Gln Gly Glu Leu Pro Cys
 245 250 255
 Pro Asp Cys Leu Ile Gln Gln Ala Phe Leu Cys Lys Trp Val Met Lys
 260 265 270
 Lys Phe Phe Asn Asn Ala Gly Ile Ala Val Ser Arg His Phe Leu Gln
 275 280 285
 Met Val Tyr Asp His Leu Ser Arg Ser Ser Cys Ala Thr Leu Arg Met
 290 295 300
 Arg Asn Lys Ile Val Ile Ile Lys Pro Gly Val Val Val Ile Asp
 305 310 315
 <210>1072
 <211>918
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1072
 Leu Ile Ser Leu Val Val Lys Phe Met Ser Lys Asp Lys Lys Met Lys
 1 5 10 15
 Pro Glu Pro Lys Lys Asn Phe Pro Thr Val Phe Phe Phe Leu Leu Phe
 20 25 30
 Gly Val Val Phe Gly Val Val Ala Phe Gln Asn Phe Leu Ala Gly Lys
 35 40 45
 Lys Ala Arg Val Gly Phe Ser His Gln Ile Glu His Leu Val Asn Leu
 50 55 60
 Arg Leu Ile Val Pro Glu Asp Ser His Lys Ile Ala Leu Asn Asp Asn
 65 70 75 80
 Leu Val Ser Phe Gly Gly Arg Phe Arg Asp Val Gln Thr Gln Glu Gly
 85 90 95
 Gln Leu Arg Tyr His Tyr Leu Glu Leu Ile Asp Gln Gly His Arg Leu
 100 105 110
 Asp Leu Asp Leu Gln Glu Thr Ser Lys Ser Leu Thr Thr Leu Gly Lys
 115 120 125
 Glu Val Thr Asn Ser Ile Leu Trp Phe Ser Ala Ile Ser Gly Ser Pro
 130 135 140
 Ile Pro Glu Gln Gly Tyr Ala Ile Ser Tyr Pro Ser Glu Val Ser Gly
 145 150 155 160
 Ser Val Leu Thr Glu Pro Leu Val Val Thr Gly Pro Ala Thr Pro Gln
 165 170 175

Leu	Ile	Asn	Leu	His	Ser	Leu	Gln	Glu	Arg	Tyr	Pro	Leu	Ser	Arg
			180					185					190	
Ser	Pro	Glu	Ala	Leu	Arg	Thr	Tyr	Gly	Ser	Asp	Leu	Tyr	Glu	Leu
		195					200				205			Ile
Gly	Lys	Tyr	Leu	Ser	Pro	Val	Leu	Gly	Ile	Gly	Ser	Glu	Thr	Leu
	210					215					220			Lys
Arg	Glu	Leu	Lys	Asp	Leu	Tyr	Gln	Gln	Val	Glu	Val	Ser	Leu	Thr
225					230					235				Gln
Glu	Thr	Asp	Thr	Glu	Ala	Ala	Tyr	Thr	Leu	Tyr	Gly	Gln	Val	Leu
			245						250				255	Ser
Thr	Leu	Asn	Arg	Ile	Ser	Ser	Ser	Leu	Val	Val	Ser	Glu	Gly	Glu
		260						265					270	
Arg	Phe	Ser	Gln	Leu	Arg	Ser	Val	Arg	Leu	Tyr	Arg	Glu	Glu	Trp
		275					280					285		Asn
Lys	Tyr	His	Lys	Leu	Val	Glu	Ala	Arg	Asp	Leu	Asn	Gln	Ala	Gln
	290					295					300			Leu
Glu	Lys	Leu	Arg	Gly	Glu	Leu	Ser	Gln	Thr	Val	Trp	Tyr	Phe	Asn
305						310				315				Asn
Gln	Glu	Leu	Ser	Ser	Arg	Ser	Leu	Glu	Lys	Gln	Asp	Pro	Glu	Val
				325					330					Phe
Gly	His	Trp	Phe	Ala	Gly	Ala	Lys	Glu	Glu	Trp	Thr	Ala	Phe	Lys
			340					345					350	Phe
Asn	His	Ser	Leu	Ser	Phe	Lys	Ala	Pro	Asp	Gln	Pro	Arg	Asn	Leu
		355					360					365		Val
Leu	Glu	Lys	Thr	Phe	Lys	Ser	Gln	Glu	Pro	Ser	Pro	His	Xaa	Leu
	370					375					380			Gly
Tyr	Leu	Phe	Thr	Xaa	Leu	Pro	Ile	Ile	Leu	Val	Leu	Leu	Phe	Val
385					390					395				Tyr
Leu	Val	Phe	Ser	Arg	Gln	Met	Arg	Gly	Met	Ser	Gly	Ser	Ala	Met
				405					410					Ser
Phe	Gly	Lys	Ser	Pro	Ala	Arg	Met	Leu	Leu	Lys	Gly	Gln	Asn	Lys
			420					425					430	Val
Thr	Phe	Ala	Asp	Val	Ala	Gly	Ile	Glu	Glu	Ala	Lys	Glu	Glu	Leu
	435						440					445		Ile
Glu	Ile	Val	Asp	Phe	Leu	Lys	Asn	Pro	Asn	Lys	Phe	Thr	Ser	Leu
	450					455					460			Gly
Gly	Arg	Ile	Pro	Lys	Gly	Val	Leu	Leu	Ile	Gly	Pro	Pro	Gly	Thr
465					470					475				Gly
Lys	Thr	Leu	Ile	Ala	Lys	Ala	Val	Ser	Gly	Glu	Ala	Asp	Arg	Pro
			485						490					Phe
Phe	Ser	Ile	Ala	Gly	Ser	Asp	Phe	Val	Glu	Met	Phe	Val	Gly	Val
			500					505					510	Gly
Ala	Ser	Arg	Ile	Arg	Asp	Met	Phe	Glu	Gln	Ala	Lys	Arg	Asn	Ala
		515					520					525		Pro
Cys	Ile	Ile	Phe	Ile	Asp	Glu	Ile	Asp	Ala	Val	Gly	Arg	His	Arg
	530					535					540			Gly
Ala	Gly	Ile	Gly	Gly	Gly	His	Asp	Glu	Arg	Glu	Gln	Thr	Leu	Asn
545					550					555				Gln
Leu	Leu	Val	Glu	Met	Asp	Gly	Phe	Gly	Thr	Asn	Glu	Gly	Val	Ile
				565					570					Leu
Met	Ala	Ala	Thr	Asn	Arg	Pro	Asp	Val	Leu	Asp	Lys	Ala	Leu	Leu
			580					585					590	Arg
Pro	Gly	Arg	Phe	Asp	Arg	Arg	Val	Val	Met	Asn	Leu	Pro	Asp	Ile
		595					600					605		Lys
Gly	Arg	Phe	Glu	Ile	Leu	Met	Val	His	Ala	Lys	Arg	Ile	Lys	Leu
	610					615					620			Asp
Pro	Thr	Val	Asp	Leu	Met	Ala	Val	Ala	Arg	Ser	Thr	Pro	Gly	Ala
625					630					635				Ser
Gly	Ala	Asp	Leu	Glu	Asn	Leu	Leu	Asn	Glu	Ala	Ala	Leu	Leu	Ala
				645					650					Ala
Arg	Lys	Asp	Arg	Thr	Ala	Val	Thr	Ala	Val	Asp	Val	Ala	Glu	Ala
			660					665					670	Arg
Asp	Lys	Val	Leu	Tyr	Gly	Lys	Glu	Arg	Arg	Ser	Leu	Glu	Met	Asp
		675					680					685		Ala

Glu Glu Arg Lys Thr Thr Ala Tyr His Glu Ser Gly His Val Val
 690 695 700
 Gly Leu Cys Val Gln His Gly Asp Pro Val Asp Lys Val Thr Ile Ile
 705 710 715 720
 Pro Arg Gly Leu Ser Leu Gly Ala Thr His Phe Leu Pro Glu Lys Asn
 725 730 735
 Lys Leu Ser Tyr Trp Lys Lys Glu Leu Tyr Asp Gln Leu Ala Val Leu
 740 745 750
 Met Gly Gly Arg Ala Ala Glu Glu Ile Phe Leu Gly Asp Ile Ser Ser
 755 760 765
 Gly Ala Gln Gln Asp Ile Ser Gln Ala Thr Lys Leu Val Arg Ser Met
 770 775 780
 Val Cys Glu Trp Gly Met Ser Pro Gln Leu Gly Asn Val Thr Tyr Asp
 785 790 795 800
 Glu Arg Ser Asp Gly Leu Thr Gly Tyr Gly Gly Tyr His Glu Lys Ser
 805 810 815
 Tyr Ser Glu Glu Thr Ala Lys Thr Ile Asp Thr Glu Leu Arg Met Leu
 820 825 830
 Leu Asp Ala Ala Tyr Gln Arg Ala Leu Asp Ile Ile Asn Glu His Lys
 835 840 845
 Ala Glu Ile Glu Leu Met Thr Gln Met Leu Ile Glu Phe Glu Thr Leu
 850 855 860
 Asp Ser Lys Asp Val Lys Glu Ile Met Asp His Thr Trp Asp Pro Glu
 865 870 875 880
 Lys Lys Arg Ala Arg Leu Lys Glu Glu Gly Met Leu Phe Lys Lys Ser
 885 890 895
 Ser Asp Asp Leu Pro Pro Pro Pro Lys Glu Asp Thr Leu Pro Gly
 900 905 910
 Leu Gly Phe Asn Ala Thr
 915

<210>1073

<211>568

<212>PRT

<213>Chlamydia pneumoniae

<400>1073

Ser Ser Cys Tyr Leu Arg Xaa Ser Ala Ala Leu Ala Ile Ser Asp Ile
 1 5 10 15
 Pro Gln Ser Asn Ile Val Ala Gly Val Arg Ile Gly Cys Ile Asp Asn
 20 25 30
 Gln Trp Val Ile Asn Pro Thr Lys Thr Glu Leu Ala Ser Ser Thr Leu
 35 40 45
 Asp Leu Val Leu Ala Gly Thr Glu Asn Ala Ile Leu Met Ile Glu Gly
 50 55 60
 His Cys Asp Phe Phe Thr Glu Glu Gln Val Leu Asp Ala Ile Glu Phe
 65 70 75 80
 Gly His Lys His Ile Val Thr Ile Cys Lys Arg Leu Gln Leu Trp Gln
 85 90 95
 Glu Glu Val Gly Lys Ser Lys Asn Leu Ser Ala Val Tyr Pro Leu Pro
 100 105 110
 Ala Glu Val Leu Thr Ala Val Lys Glu Cys Ala Gln Asp Lys Phe Thr
 115 120 125
 Glu Leu Phe Asn Ile Lys Asp Lys Lys Val His Ala Ala Thr Ala His
 130 135 140
 Glu Ile Glu Glu Asn Ile Leu Glu Lys Leu Gln Arg Glu Asp Asp Asp
 145 150 155 160
 Leu Phe Ser Ser Phe Asn Ile Lys Ala Ala Cys Lys Thr Leu Lys Ser
 165 170 175
 Asp Thr Met Arg Ala Leu Ile Arg Asp Arg Glu Ile Arg Ala Asp Gly
 180 185 190
 Arg Ser Leu Thr Thr Val Arg Pro Ile Thr Ile Glu Thr Ser Tyr Leu
 195 200 205
 Pro Arg Thr His Gly Ser Cys Leu Phe Thr Arg Gly Glu Thr Gln Thr
 210 215 220
 Leu Ala Val Cys Thr Leu Gly Ser Glu Ala Met Ala Gln Arg Tyr Glu

225		230		235		240									
Asp	Leu	Asn	Gly	Glu	Gly	Leu	Ser	Lys	Phe	Tyr	Leu	Gln	Tyr	Phe	Phe
		245						250						255	
Pro	Pro	Phe	Ser	Val	Gly	Glu	Val	Gly	Arg	Ile	Gly	Ser	Pro	Gly	Arg
		260						265					270		
Arg	Glu	Ile	Gly	His	Gly	Lys	Leu	Ala	Glu	Lys	Ala	Leu	Ser	His	Ala
		275						280					285		
Leu	Pro	Asp	Ser	Ala	Thr	Phe	Pro	Tyr	Thr	Ile	Arg	Ile	Glu	Ser	Asn
		290						295					300		
Ile	Thr	Glu	Ser	Asn	Gly	Ser	Ser	Ser	Met	Ala	Ser	Val	Cys	Gly	Gly
		305						310					315		320
Cys	Leu	Ala	Leu	Met	Asp	Ala	Gly	Val	Pro	Ile	Ser	Ser	Pro	Ile	Ala
		325						330					335		
Gly	Ile	Ala	Met	Gly	Leu	Ile	Leu	Asp	Asp	Gln	Gly	Ala	Ile	Ile	Leu
		340						345					350		
Ser	Asp	Ile	Ser	Gly	Leu	Glu	Asp	His	Leu	Gly	Asp	Met	Asp	Phe	Lys
		355						360					365		
Ile	Ala	Gly	Ser	Gly	Lys	Gly	Ile	Thr	Ala	Phe	Gln	Met	Asp	Ile	Lys
		370						375					380		
Val	Glu	Gly	Ile	Thr	Pro	Ala	Ile	Met	Lys	Lys	Ala	Leu	Ser	Gln	Ala
		385						390					395		400
Lys	Gln	Gly	Cys	Asn	Asp	Ile	Leu	Asn	Ile	Met	Asn	Glu	Ala	Leu	Ser
		405						410					415		
Ala	Pro	Lys	Ala	Asp	Leu	Ser	Gln	Tyr	Ala	Pro	Arg	Ile	Glu	Thr	Met
		420						425					430		
Gln	Ile	Lys	Pro	Thr	Lys	Ile	Ala	Ser	Val	Ile	Gly	Pro	Gly	Gly	Lys
		435						440					445		
Gln	Ile	Arg	Gln	Ile	Ile	Glu	Glu	Thr	Gly	Val	Gln	Ile	Asp	Val	Asn
		450						455					460		
Asp	Leu	Gly	Val	Val	Ser	Ile	Ser	Ala	Ser	Ser	Ala	Ser	Ala	Ile	Asn
		465						470					475		480
Lys	Ala	Lys	Glu	Ile	Ile	Glu	Gly	Leu	Val	Gly	Glu	Val	Glu	Val	Gly
		485						490					495		
Lys	Thr	Tyr	Arg	Gly	Arg	Val	Thr	Ser	Val	Val	Ala	Phe	Gly	Ala	Phe
		500						505					510		
Val	Glu	Val	Leu	Pro	Gly	Lys	Glu	Gly	Leu	Cys	His	Ile	Ser	Glu	Cys
		515						520					525		
Ser	Arg	Gln	Arg	Ile	Glu	Asn	Ile	Ser	Asp	Val	Val	Lys	Glu	Gly	Asp
		530						535					540		
Ile	Ile	Asp	Val	Lys	Leu	Leu	Ser	Ile	Asn	Glu	Lys	Gly	Gln	Leu	Lys
		545						550					555		560
Leu	Ser	His	Lys	Ala	Thr	Leu	Glu								
				565											

<210>1074

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1074

Ser	Asp	Arg	Ser	Lys	Ile	Leu	Val	Phe	Glu	Thr	Gly	Lys	Ile	Ala	Arg
1				5					10					15	
Gln	Ala	Asn	Gly	Ala	Val	Leu	Val	Arg	Ser	Gly	Glu	Thr	Cys	Val	Phe
		20						25					30		
Ala	Ser	Ala	Cys	Ala	Val	Asp	Leu	Asp	Asp	Lys	Val	Asp	Phe	Leu	Pro
		35						40					45		
Leu	Arg	Val	Asp	Tyr	Gln	Glu	Lys	Phe	Ser	Ser	Thr	Gly	Lys	Thr	Leu
		50						55				60			
Gly	Gly	Phe	Ile	Lys	Arg	Glu	Gly	Arg	Pro	Ser	Glu	Lys	Glu	Ile	Leu
		65						70				75			80
Val	Ser	Arg	Leu	Ile	Asp	Arg	Ser	Leu	Arg	Pro	Ser	Phe	Pro	Tyr	Arg
				85					90					95	
Leu	Met	Gln	Asp	Val	Gln	Val	Leu	Ser	Tyr	Val	Trp	Ser	Tyr	Asp	Gly
		100						105					110		
Gln	Val	Leu	Pro	Asp	Pro	Leu	Ala	Ile	Cys	Ala	Xaa	Leu	Leu	Leu	
		115						120					125		

<210>1075

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>1075

Leu Gly Gly Glu Lys Leu Ile Asn Met Glu Lys Asp Ile Phe Phe Met
 1 5 10 15
 Gln Gln Ala Phe Lys Glu Ala Arg Lys Ala Tyr Asp Gln Asp Glu Val
 20 25 30
 Pro Val Gly Cys Val Ile Val Lys Asp Asp Lys Ile Ile Ala Arg Ala
 35 40 45
 His Asn Ser Val Glu Lys Leu Lys Asp Ala Thr Ala His Ala Glu Ile
 50 55 60
 Leu Cys Ile Gly Ser Ala Ala Gln Asp Leu Asp Asn Trp Arg Leu Leu
 65 70 75 80
 Asp Thr Val Leu Tyr Cys Thr Leu Glu Pro Cys Leu Met Cys Ala Gly
 85 90 95
 Ala Ile Gln Leu Ala Arg Ile Pro Arg Ile Val Trp Ala Ala Pro Asp
 100 105 110
 Val Arg Leu Gly Ala Gly Gly Ser Trp Val Asn Ile Phe Thr Glu Glu
 115 120 125
 His Pro Phe His Thr Val Ser Cys Thr Gly Gly Val Cys Ser Glu Glu
 130 135 140
 Ala Glu His Leu Met Lys Lys Phe Phe Val Glu Lys Arg Arg Glu Lys
 145 150 155 160
 Ser Glu Lys

<210>1076

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>1076

Lys Ser Ala Glu Arg Lys Val Lys Asn Lys Ile Val Thr Leu Leu Asp
 1 5 10 15
 Gln Leu Tyr Glu Asp Gln Glu Ser Arg Leu Gln Lys Leu Gly Glu Glu
 20 25 30
 Ile Val Pro Asn Leu Thr Pro Glu Asp Leu Leu Gln Pro Met Asp Phe
 35 40 45
 Xaa Gln Leu Glu Gly Asn Pro Ala Phe Arg Phe Glu Glu Gly Val Leu
 50 55 60
 Ser Gly Ile Gly Glu Val Arg Ala Ala Ile Phe Asn Gly Ala Leu Ser
 65 70 75 80
 Arg Glu Leu Glu Ser Gln Arg Ser Ser Ile Gly Val Gly Asp Leu Phe
 85 90 95
 Phe Phe Thr Lys
 100

<210>1077

<211>180

<212>PRT

<213>Chlamydia pneumoniae

<400>1077

His Leu Ser Ile Glu Glu Leu Met Ser Ile Gln Pro Val Ser Asn Thr
 1 5 10 15
 Thr Thr Lys Ala Asp Lys Val Ile Pro Asp Ser Thr Lys Val Ile Ser
 20 25 30
 Asp Ser Ile Thr Ile Asn Lys Gln Ser Ala Phe Tyr Phe Cys Ile Ser
 35 40 45
 Val Met Leu Arg Leu Ser Glu Ser Thr Thr Glu Tyr Gly Lys Ser Ile
 50 55 60
 Leu Ala Val Leu Glu Asp Asn Thr Ile Val Gln Gln Gln Arg Val Lys
 65 70 75 80
 Glu Leu Ile Asn Leu Pro Leu Leu Lys Val Pro Asp Leu Gln Lys Lys
 85 90 95
 Asp Gly Ser Asp Asp Glu Tyr Lys Asn Gln Asn Glu Ile Gln Ala Tyr

100 105 110
 Gln Ser Ser Asn Gln Gln Ile Ser Ala Asn Arg Gln Met Ile Gln Gln
 115 120 125
 Glu Leu Ser Ser Ala Gln Gln Arg Ala Gln Ala Asn Gln Lys Ser Val
 130 135 140
 Asn Ser Thr Thr Ile Glu Ser Met Gln Ile Leu Gln Ala Thr Ser Ser
 145 150 155 160
 Met Leu Ser Thr Leu Lys Glu Leu Thr Ile Lys Ala Asn Leu Thr Asn
 165 170 175
 Ser Pro Ser Asp
 180

<210>1078

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1078

Asn Arg Lys Pro Val Arg Leu Asn Met Trp Ile Ile Asp Pro Leu Ser
 1 5 10 15
 Ala Lys Xaa Pro Leu Gln Ala Ala Ile Asn Val Pro Gly Thr Pro Ile
 20 25 30
 Thr Gly Gly Pro Asn Thr Ala Thr Ala Asp Asp Ile Ile Ala Lys Phe
 35 40 45
 Ser Lys Asp Ser Asn Pro Leu Ile Val Thr Val Tyr Tyr Val Tyr Gln
 50 55 60
 Ser Val Leu Val Ala Gln Asp Asn Leu Ser Ile Ile Ala Gln Glu Leu
 65 70 75 80
 Gln Ala Asn Ser Ser Ala Gln Thr Tyr Leu Asn Asn Gln Glu Ala Leu
 85 90 95
 Tyr Gln Tyr Val Ser Ile Pro Lys Asn Lys Leu Asn Asp Asn Ser Ser
 100 105 110
 Ser Tyr Leu Gln Asn Ile Gln Ser Asp Asn Gln Ala Ile Gly Ala Ser
 115 120 125
 Arg Gln Ala Ile Gln Asn Gln Ile Ser Ser Leu Gly Asn Ala Ala Gln
 130 135 140
 Val Ile Ser Ser Asn Leu Asn Thr Asn Asn Asn Ile Ile Gln Gln Ser
 145 150 155 160
 Leu Gln Val Gly Gln Ala Leu Ile Gln Thr Phe Ser Gln Ile Val Ser
 165 170 175
 Leu Ile Ala Asn Ile
 180

<210>1079

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1079

Thr Lys Val Asn Phe Phe Ile Met Ser Ile Thr Thr Leu Gly Thr Leu
 1 5 10 15
 Pro Thr Val Asn Thr Ile Asn Ser Ser Arg Pro Pro Leu Glu Pro Leu
 20 25 30
 Asn Thr Pro Lys Ile Gly Ala Val Leu Phe Ser Ile Tyr Glu Leu Leu
 35 40 45
 Leu Gln Ala Ile Glu Ile Arg Gln Gln Thr Val Leu Thr Gln Ser Gln
 50 55 60
 Gln Leu Asn Asp Asn Thr Asn Ile Gln Gln Gln Leu Asn Gln Glu Thr
 65 70 75 80
 Asn Gln Ile Lys Tyr Ala Ile Val Ser Ala Gly Ala Lys Glu Asp Glu
 85 90 95
 Ile Thr Arg Val Gln Asn Gln Asn Gln Asn Tyr Ser Ala Gln Arg Ser
 100 105 110
 Asn Ile Gln Asp Glu Leu Val Thr Thr Arg Gln Asn Gly Gln Ile Ile
 115 120 125
 Leu Ser His Ala Ser Thr Asn Ile Asn Ile Ile Gln Gln Gln Ser Ser
 130 135 140
 Gln Asp Ser Ser Phe Ile Lys Thr Thr Asn Ser Ile Gly Ser Thr Val

145 150 155 160
 Asn Gln Leu Asn Lys Pro Leu Gly
 165
 <210>1080
 <211>440
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1080
 Val Leu Asn Tyr Ser Phe Ile Gly Met Leu Lys Pro Met Tyr Val Leu
 1 5 10 15
 Ser Lys Arg Leu Tyr Arg Trp Val Asn Gln Leu Ile Lys Leu Gly Asp
 20 25 30
 Leu Val Lys Asn Ser Arg Ser Phe Ser Val Glu Trp Val Phe Ile Ser
 35 40 45
 Ala Leu Leu Leu Ile Phe Gly Cys Leu Gly Cys Ala Ser Val Val Lys
 50 55 60
 Val Ser Leu Val Pro Phe Leu Leu Leu Phe Ser Phe Leu Ala Phe Pro
 65 70 75 80
 Leu Ile Leu Cys Phe Arg Gly Lys Gly Tyr Ala Leu Leu Leu Gly Val
 85 90 95
 Phe Val Thr Leu Tyr Val Ala Lys Tyr Val Val Gly Glu Thr Leu Tyr
 100 105 110
 Val Ser Phe Trp Leu Ser Gly Leu Gly Val Ser Phe Leu Leu Ala Phe
 115 120 125
 Gly Leu Phe Leu Gln Gly Val Trp Leu Ala Gln Glu Glu Met Val
 130 135 140
 Lys Gly Lys Glu Gln Leu Arg Leu Ser Glu Asp Leu Asp Ala Gln Arg
 145 150 155 160
 Ser Ala Tyr Glu Asp Leu Leu Leu Thr Lys Ser Gln Glu Lys Glu Phe
 165 170 175
 Leu Asp Ala Arg Ala Gln Gly Leu Asp Arg Glu Leu Thr Glu Cys Gln
 180 185 190
 Glu Leu Leu Lys Ala Ala Tyr Gln Lys Gln Glu Tyr Leu Thr Ile Asp
 195 200 205
 Leu Lys Ile Leu Ala Asp Gln Lys Asn Ser Trp Leu Glu Asp Tyr Ala
 210 215 220
 Glu Leu His Asn Lys Tyr Ile Glu Leu Val Ser Lys Asn Gly Asp Val
 225 230 235 240
 Val Phe Pro Trp Val Ala Glu Pro Ser Val Gly Glu Ser Gln Gly Ser
 245 250 255
 Glu Arg Val Asp Val Ser Arg Trp Val Ser Ala Leu Gln Glu Lys Glu
 260 265 270
 Glu Ser Leu Glu Arg Leu Arg Asn Glu Ile Leu Val Glu Lys Gln Arg
 275 280 285
 Cys Ser Asp Tyr Glu His Arg Cys Gln Glu Leu Gly Leu Leu Leu Gln
 290 295 300
 Asn Phe Thr Ala Leu Glu Arg Arg Cys Glu Glu Leu Gln Asn Leu Leu
 305 310 315 320
 Asn Gln Lys Glu Thr Gln Ile Asn Glu Leu His Gln Leu Val Cys Lys
 325 330 335
 Ser Glu Glu Lys Val Ser Val Glu Pro Ser Ala His Ala Glu Thr Ser
 340 345 350
 Cys Val Glu Glu Lys Gln Tyr Lys Gly Leu Tyr Ser Gln Leu Gln Glu
 355 360 365
 Gln Phe Leu Glu Lys Ser Glu Thr Leu Ser Leu Val Arg Lys Lys Leu
 370 375 380
 Phe Ala Val Gln Glu Lys Tyr Leu Thr Leu Lys Lys Lys Glu Glu Leu
 385 390 395 400
 Thr Lys Gln Asp Ile Ser Phe Asp Asp Ile Ser Met Ile Gln Gly Leu
 405 410 415
 Leu Glu Arg Ile Glu Ile Leu Glu Glu Glu Val Ser His Leu Glu Glu
 420 425 430
 Leu Val Ser Arg Ser Leu Ser Leu
 435 440

<210>1081

<211>294

<212>PRT

<213>Chlamydia pneumoniae

<400>1081

Val Ile Leu Met Lys Arg Asn Asp Pro Cys Trp Cys Gly Ser Gly Arg
 1 5 10 15
 Lys Trp Lys Gln Cys His Tyr Pro Gln Pro Pro Lys Met Ser Pro Glu
 20 25 30
 Ala Leu Lys Gln His Tyr Ala Ser Gln Tyr Asn Ile Leu Leu Lys Thr
 35 40 45
 Pro Glu Gln Lys Ala Lys Ile Tyr Asn Ala Cys Gln Ile Thr Ala Arg
 50 55 60
 Ile Leu Asp Glu Leu Cys Lys Ala Ser Gln Lys Gly Val Thr Thr Asn
 65 70 75 80
 Glu Leu Asp Glu Leu Ser Gln Glu Leu His Lys Lys Tyr Asp Ala Ile
 85 90 95
 Ala Ala Pro Phe His Tyr Gly Ser Pro Pro Phe Pro Lys Thr Ile Cys
 100 105 110
 Thr Ser Leu Asn Glu Val Ile Cys His Gly Ile Pro Asn Asp Ile Pro
 115 120 125
 Leu Lys Asp Gly Asp Ile Met Asn Ile Asp Val Ser Cys Ile Val Asp
 130 135 140
 Gly Tyr Tyr Gly Asp Cys Ser Arg Met Val Met Ile Gly Glu Val Pro
 145 150 155 160
 Glu Ile Lys Lys Lys Ile Cys Gln Ala Ala Leu Glu Cys Leu Asn Asp
 165 170 175
 Ser Ile Ala Ile Leu Lys Pro Gly Ile Pro Leu Cys Glu Ile Gly Glu
 180 185 190
 Ala Ile Glu Ala Arg Ala Asp Thr Tyr Gly Phe Ser Val Val Asp Gln
 195 200 205
 Phe Val Gly His Gly Val Gly Ile Glu Phe His Glu Asn Pro Tyr Val
 210 215 220
 Pro His Tyr Arg Asn Arg Ser Met Ile Pro Leu Ala Pro Gly Met Ile
 225 230 235 240
 Phe Thr Ile Glu Pro Met Ile Asn Val Gly Lys Lys Glu Gly Val Val
 245 250 255
 Asp Pro Lys Asn Gln Trp Glu Ala Arg Thr Cys Asp Asn Gln Pro Ser
 260 265 270
 Ala Gln Trp Glu His Thr Ile Ala Ile Thr Glu Thr Gly Tyr Glu Ile
 275 280 285
 Leu Thr Leu Leu Asn Asp
 290

<210>1082

<211>202

<212>PRT

<213>Chlamydia pneumoniae

<400>1082

Met Leu Ile Leu Leu Asn Leu Ser Leu Leu Phe Tyr Val Leu Phe Asp
 1 5 10 15
 Ser Pro Gly Ser Ile Pro Val Phe Val Ala Leu Leu Lys Asn Phe Ser
 20 25 30
 Arg Lys Lys Gln Gln Arg Val Ile Leu Arg Glu Cys Leu Phe Ala Leu
 35 40 45
 Gly Ala Leu Ile Leu Phe Val Thr Phe Gly Arg Ser Phe Phe Gln Phe
 50 55 60
 Leu Asp Ile Ser Leu Tyr Ala Phe Gln Ile Ile Gly Gly Phe Leu Leu
 65 70 75 80
 Phe Thr Val Ser Ile Lys Met Met Leu Ala Pro Met Pro Glu Lys Ala
 85 90 95
 Lys Asp Asp Thr Ser Lys Thr Glu Pro Ile Phe Phe Pro Leu Ala Phe
 100 105 110
 Pro Val Ile Thr Gly Pro Ala Val Ile Thr Ala Leu Leu Ser Tyr Met
 115 120 125

Glu Glu Gly Ile Tyr Ser Arg Glu Ile Ile Phe Thr Ala Met Ile Ile
 130 135 140
 Ala Trp Ala Phe Ser Leu Phe Thr Leu Leu Cys Ser Ser Phe Phe Asp
 145 150 155 160
 Arg Leu Ser Gly Asn Phe Gly Leu Leu Ala Leu Glu Arg Leu Phe Gly
 165 170 175
 Ile Ala Leu Leu Leu Met Ser Val Asn Leu Met Leu Lys Gly Ile Ser
 180 185 190
 Ile Ala Phe Asn Ile Gly Phe Tyr Ile Gly
 195 200

<210>1083

<211>251

<212>PRT

<213>Chlamydia pneumoniae

<400>1083

Thr Ser Arg Tyr Gly Pro Leu Pro Cys Ser Arg His His Glu Asp Leu
 1 5 10 15
 His Lys Arg His Ala Asn Thr Asn Arg Glu Ile Asp Arg Gln Phe
 20 25 30
 Pro Ala Arg Phe Leu Tyr Arg Ser Gln Asp Pro Ile Tyr Lys Phe Glu
 35 40 45
 Asp Leu Asn Gly Lys Val Leu Gly Phe Cys Leu Asn Asn Ser Arg Asp
 50 55 60
 Leu Asn Arg Leu Leu Glu Thr Leu Asn Arg Asn Gly Val Val Pro Ser
 65 70 75 80
 Glu Val Lys Asn Val Ser Ser Asp Leu Ile Ser Pro Met Leu Leu Asn
 85 90 95
 Lys Ile Asp Phe Leu Tyr Gly Ala Phe Tyr Asn Ile Glu Gly Val Lys
 100 105 110
 Leu Gln Thr Leu Gly Met Pro Val Lys Cys Phe Leu Ser Asp Thr Cys
 115 120 125
 Asp Leu Pro Thr Gly Pro Gln Leu Ile Val Phe Thr Lys Lys Gly Thr
 130 135 140
 Lys Ala Ser Glu Pro Glu Ile Val Glu Ala Phe Gln Lys Ala Leu Gln
 145 150 155 160
 Glu Ser Ile Ile Phe Ser Lys Asp His Pro Glu Asp Ala Phe Lys Leu
 165 170 175
 Tyr Ala Lys Glu Thr Lys Ser Ile Pro Lys Asn Leu Tyr Gln Glu Tyr
 180 185 190
 Leu Gln Trp Glu Glu Thr Phe Pro Leu Leu Ala Gln Ser Gln Asp Pro
 195 200 205
 Leu Ser Lys Asp Leu Val Asp Lys Leu Leu Glu Thr Ile Ile Lys Arg
 210 215 220
 Tyr Pro Glu Leu Ala Ser Glu Val Ala Lys Phe Ser Leu Asn Asp Leu
 225 230 235 240
 Tyr Asn Pro Ser Leu Pro Glu Glu Gln Ser Val
 245 250

<210>1084

<211>303

<212>PRT

<213>Chlamydia pneumoniae

<400>1084

Arg Ser Pro Thr Thr Ser Phe His Pro Ala Thr Val His Ser Tyr Val
 1 5 10 15
 Cys Ser Gly Ser Thr Asp Cys Thr Leu Val Trp Leu Gly Asn Arg Cys
 20 25 30
 Cys Asn Arg Pro Tyr Ser Thr His His Ile Leu Ser Ala His Pro Asp
 35 40 45
 Tyr Leu Ser Gly His Leu Ile Asn Thr Arg Arg Thr Tyr Arg Ala Ile
 50 55 60
 Arg Pro Leu Arg Ser Thr Lys Phe Gln Leu Leu Ile Lys Leu Arg Ile
 65 70 75 80
 Pro His Ala Leu Pro His Ile Phe Ser Gly Leu Lys Ile Ala Ile Gly
 85 90 95

Ser Ala Gly Phe Ala Ala Ile Ala Gly Glu Trp Val Ser Gln Ser
 100 105 110
 Gly Leu Gly Ile Leu Met Leu Glu Ser Arg Arg Asn Tyr Glu Met Glu
 115 120 125
 Leu Ala Phe Ala Gly Leu Ala Thr Leu Ser Ile Leu Thr Leu Ser Leu
 130 135 140
 Phe Gln Ile Thr Leu Leu Ile Glu Lys Leu Ile Phe Ser Leu Phe Arg
 145 150 155 160
 Val Lys Arg Met Ser Leu Lys His Lys Ser Val Ala Lys Lys Ala Leu
 165 170 175
 Ser Val Leu Ala Leu Ile Pro Ile Met Leu Ile Pro Trp Lys Gly Asn
 180 185 190
 Ser Lys Ser Pro Pro Asp Lys Lys Asn Leu Thr Ser Leu Thr Leu Leu
 195 200 205
 Leu Asp Trp Thr Pro Asn Pro Asn His Ile Pro Leu Tyr Ala Gly Val
 210 215 220
 Ala Lys Gly Tyr Phe Lys Gln His Gly Leu Asp Leu Gln Leu Gln Lys
 225 230 235 240
 Asn Thr Asp Ser Ser Ser Ala Val Pro His Val Leu Phe Glu Gln Val
 245 250 255
 Asp Met Ala Leu Tyr His Ala Leu Gly Ile Met Lys Thr Ser Ile Lys
 260 265 270
 Gly Met Pro Ile Gln Ile Val Gly Arg Leu Ile Asp Ser Ser Leu Gln
 275 280 285
 Asp Phe Ser Thr Glu Val Arg Thr Pro Ser Thr Asn Leu Lys Thr
 290 295 300

<210>1085

<211>460

<212>PRT

<213>Chlamydia pneumoniae

<400>1085

Met Arg Gln Glu Lys Asp Ser Leu Gly Ile Val Glu Val Pro Glu Asp
 1 5 10 15
 Lys Leu Tyr Gly Ala Gln Thr Met Arg Ser Arg Asn Phe Phe Ser Trp
 20 25 30
 Gly Pro Glu Leu Met Pro Tyr Glu Val Ile Arg Ala Leu Val Trp Ile
 35 40 45
 Lys Lys Cys Ala Ala Gln Ala Asn Gln Asp Leu Gly Phe Leu Asp Ser
 50 55 60
 Lys His Cys Asp Met Ile Val Ala Ala Ala Asp Glu Ile Leu Glu Gly
 65 70 75 80
 Gly Phe Glu Glu His Phe Pro Leu Lys Val Trp Gln Thr Gly Ser Gly
 85 90 95
 Thr Gln Ser Asn Met Asn Val Asn Glu Val Ile Ala Asn Leu Ala Ile
 100 105 110
 Arg His His Gly Gly Val Leu Gly Ser Lys Asp Pro Ile His Pro Asn
 115 120 125
 Asp His Val Asn Lys Ser Gln Ser Ser Asn Asp Val Phe Pro Thr Ala
 130 135 140
 Met His Ile Ala Ala Val Ile Ser Leu Lys Asn Lys Leu Ile Pro Ala
 145 150 155 160
 Leu Asp His Met Ile Arg Val Leu Asp Ala Lys Val Glu Glu Phe Arg
 165 170 175
 His Asp Val Lys Ile Gly Arg Thr His Leu Met Asp Ala Val Pro Met
 180 185 190
 Thr Leu Gly Gln Glu Phe Ser Gly Tyr Ser Ser Gln Leu Arg His Cys
 195 200 205
 Leu Glu Ser Ile Ala Phe Ser Leu Ala His Leu Tyr Glu Leu Ala Ile
 210 215 220
 Gly Ala Thr Ala Val Gly Thr Gly Leu Asn Val Pro Glu Gly Phe Val
 225 230 235 240
 Glu Lys Ile Ile His Tyr Leu Arg Lys Xaa Thr Asp Glu Pro Phe Ile
 245 250 255
 Pro Ala Xaa Asn Tyr Phe Ser Ala Leu Ser Cys His Asp Ala Leu Val

<211>20
<212>DNA
<400>1396
gaccttgcca gcttgggtcg 20
<210>1397
<211>20
<212>DNA
<400>1397
gctgctaaat cccatcgctt 20
<210>1398
<211>20
<212>DNA
<400>1398
gttttgtggc tttggcagtg 20
<210>1399
<211>20
<212>DNA
<400>1399
actttcctaa gaagcgtagc 20
<210>1400
<211>20
<212>DNA
<400>1400
gaggaatggc gcaggagtta 20
<210>1401
<211>20
<212>DNA
<400>1401
gcagtgaaaa cggaatccag 20
<210>1402
<211>20
<212>DNA
<400>1402
gcgtggggat tgtagggata 20
<210>1403
<211>20
<212>DNA
<400>1403
ggccggggat caatcagcta 20
<210>1404
<211>20
<212>DNA
<400>1404
gaataagatg caggcggaag 20
<210>1405
<211>20
<212>DNA
<400>1405
gggagacgtt tgtgcgtaaa 20
<210>1406
<211>20
<212>DNA
<400>1406
cgtcctgcag gtgttattgt 20
<210>1407
<211>20
<212>DNA
<400>1407
caaggggtgt agagaaagga 20
<210>1408
<211>20
<212>DNA
<400>1408
gaagacaaac cttgtcctgg 20

Thr Val Met Thr Thr Ile Thr Ala Ala Val Gln Val Gly Met Met Leu
 275 280 285
 Ala Ala Phe Leu Phe Met Lys Gln Met Ser Asp Leu Ser Asp Val Ile
 290 295 300
 Ser Thr Ala Lys Tyr Phe Asp Lys Asp Ser Asp Phe Leu Ser Lys Ala
 305 310 315 320
 Glu Val Pro Gln Asn Thr Glu Ile Tyr Glu Ile Asn Gly Pro Phe Phe
 325 330 335
 Phe Gly Ile Ala Asp Arg Leu Lys Asn Leu Leu Asn Asp Ile Glu Lys
 340 345 350
 Pro Pro Lys Ile Phe Ile Leu Cys Met Thr Arg Val Pro Thr Ile Asp
 355 360 365
 Ala Ser Ala Met His Ala Leu Glu Glu Phe Phe Leu Glu Cys Asp Arg
 370 375 380
 Gln Gly Thr Leu Leu Leu Leu Ala Gly Val Lys Lys Thr Pro Leu Ala
 385 390 395 400
 Asp Leu Lys Arg Tyr His Leu Asp Glu Leu Ile Gly Val Asp His Ile
 405 410 415
 Phe Ser Asn Ile Lys Ser Ala Leu Leu Phe Ala Gln Ala Leu Thr Asn
 420 425 430
 Leu Glu Ser Lys Thr Ser Thr Arg His Leu Val
 435 440

<210>1087

<211>143

<212>PRT

<213>Chlamydia pneumoniae

<400>1087

Lys Asn Phe Ile Pro Lys Leu Tyr Thr Ser Ile Lys Glu Gly Tyr Ser
 1 5 10 15
 Phe Asn Thr Phe Lys Lys Asp Phe Gln Ala Gly Ile Thr Val Gly Ile
 20 25 30
 Leu Ala Phe Pro Phe Ala Ile Ala Ile Ala Ile Gly Val Gly Val Ser
 35 40 45
 Pro Ile Gln Gly Leu Leu Ala Ser Ile Ile Gly Gly Leu Leu Ala Ser
 50 55 60
 Ala Met Gly Gly Ser Asn Val Leu Ile Ser Gly Pro Ser Ser Ala Phe
 65 70 75 80
 Ile Ser Ile Leu Tyr Cys Leu Ser Ala Lys Tyr Gly Ala Glu Ala Leu
 85 90 95
 Phe Thr Val Thr Leu Leu Ala Gly Val Phe Leu Ile Ala Phe Gly Leu
 100 105 110
 Thr Gly Leu Gly Thr Phe Ile Lys Tyr Met Pro Tyr Pro Val Val Thr
 115 120 125
 Gly Leu Thr His Arg Thr Cys Asp His Tyr Ile Leu Leu Ala Asn
 130 135 140

<210>1088

<211>422

<212>PRT

<213>Chlamydia pneumoniae

<400>1088

Val Thr Met Leu Lys Leu Gln Leu Cys Ala Leu Phe Leu Phe Gly Tyr
 1 5 10 15
 Leu Ala Ile Val Phe Glu His Ile Val Arg Val Asn Lys Ser Ala Ile
 20 25 30
 Ala Leu Ala Met Gly Gly Leu Met Trp Leu Val Cys Phe Ser His Ile
 35 40 45
 Pro Met Ala Asp His Met Ile Leu Val Glu Glu Ile Ala Asp Met Ser
 50 55 60
 Gln Val Ile Phe Phe Leu Phe Ser Ala Met Ala Ile Val Glu Leu Ile
 65 70 75 80
 Asp Ala His Lys Gly Phe Ser Val Ile Val Lys Phe Cys Arg Ile Gln
 85 90 95
 Ser Arg Thr Leu Leu Trp Ala Leu Ile Gly Leu Ser Phe Phe Leu
 100 105 110

Ser Ala Ala Leu Asp Asn Leu Thr Ser Ile Ile Ile Ile Ile Ser Ile
 115 120 125
 Leu Lys Arg Leu Val Lys Ala Arg Glu Asp Arg Leu Leu Leu Gly Ala
 130 135 140
 Ile Cys Val Ile Ala Val Asn Ala Gly Gly Ala Trp Thr Pro Leu Gly
 145 150 155 160
 Asp Val Thr Thr Thr Met Leu Trp Ile Asn Asn Lys Ile Thr Ser Trp
 165 170 175
 Gly Ile Ile Arg Ala Leu Phe Val Pro Ser Leu Val Cys Val Leu Val
 180 185 190
 Ala Gly Phe Cys Gly Gln Phe Phe Leu Arg Lys Arg Gly Ser Thr Leu
 195 200 205
 Ile Ala Lys Asp Val Glu Leu Gln Ser Ala Pro Pro Lys Ser Leu Trp
 210 215 220
 Ile Ile Phe Ile Gly Leu Gly Ser Leu Leu Met Val Pro Val Trp Lys
 225 230 235 240
 Ala Cys Leu Gly Leu Pro Pro Phe Met Gly Ala Leu Leu Gly Leu Gly
 245 250 255
 Leu Val Trp Leu Thr Ser Asp Trp Ile His Ser Pro His Gly Glu Asp
 260 265 270
 Arg Tyr His Leu Arg Val Pro His Ile Leu Thr Lys Ile Asp Ile Ser
 275 280 285
 Ser Ile Thr Phe Phe Ile Gly Ile Leu Leu Ala Val Asn Ala Leu Ser
 290 295 300
 Phe Ala Asn Leu Leu Thr Asp Phe Ser Leu Trp Met Asp Lys Ile Phe
 305 310 315 320
 Ser Arg Asn Val Val Ala Ile Val Ile Gly Leu Leu Ser Ser Val Leu
 325 330 335
 Asp Asn Val Pro Leu Val Ala Xaa Thr Met Gly Met Tyr Thr Leu Pro
 340 345 350
 Leu Asp Asp Thr Leu Trp Lys Leu Ile Ala Tyr Ala Ala Xaa Thr Gly
 355 360 365
 Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly Val Ala Phe Met Gly
 370 375 380
 Leu Glu Lys Val Asp Phe Leu Trp Tyr Phe Lys Arg Ile Ser Trp Ile
 385 390 395 400
 Ala Leu Ala Ser Tyr Phe Gly Gly Leu Phe Ser Tyr Phe Val Leu Glu
 405 410 415
 Ser Leu Asn Phe Phe Ile
 420

<210>1089

<211>624

<212>PRT

<213>Chlamydia pneumoniae

<400>1089

Lys Arg Glu Val Phe Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe
 1 5 10 15
 Gly Leu Leu Phe Thr Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr
 20 25 30
 Lys Asp Asn Ala Tyr Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser
 35 40 45
 Leu Lys Tyr Ala Pro Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp
 50 55 60
 Leu Ser Gln Gln Thr Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu
 65 70 75 80
 Lys Pro Thr Thr Asn Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg
 85 90 95
 Ser Leu Asn Asp Tyr His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser
 100 105 110
 Ala Tyr Ile Pro Tyr Val Leu Lys Leu Ser Glu Asp Gly His Val Phe
 115 120 125
 Val Val Asp Val Gln Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu
 130 135 140
 Ile Leu Glu Val Asp Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu

145		150		155		160
Arg Phe Gly Arg	Gly Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser					
	165			170		175
Leu Thr Ser Arg	Ser Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile					
	180			185		190
Ala Met Leu Lys	Leu Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro					
	195			200		205
Val Arg Trp Arg	Tyr Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val					
	210			215		220
Ala Pro Leu Ile	Pro Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys					
	225			230		235
Val Leu Phe Arg	Ser Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Ser Leu					
	245			250		255
Phe Ser Ser Tyr	Met Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln					
	260			265		270
Asn Lys Gln Arg	Phe Asp Ser Asn His His Ile Gly Ser Arg Asn Gly					
	275			280		285
Phe Leu Pro Thr	Phe Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro					
	290			295		300
Tyr Arg Ser Tyr	Ile Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His					
	305			310		315
Arg Ile Gly Phe	Leu Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu					
	325			330		335
Gly Leu Glu Glu	Asp His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu					
	340			345		350
Ile Ile Asp His	Leu Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln					
	355			360		365
Thr His Asn Pro	Gly Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser					
	370			375		380
Met Leu Thr Asp	His Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe					
	385			390		395
Thr Gln Asp Glu	Val Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu					
	405			410		415
Asp Val Phe Thr	Asp Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met					
	420			425		430
Glu Gly Tyr Cys	Met Asp Met His Ala Val Ala Ser Leu Gln Asn Phe					
	435			440		445
Ser Gln Ser Val	Leu Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser					
	450			455		460
Lys Pro Met Pro	Leu Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys					
	465			470		475
His Gln Tyr Thr	Lys Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe					
	485			490		495
Ser Cys Gly Asp	Leu Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala					
	500			505		510
Thr Leu Ile Gly	Lys Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln					
	515			520		525
Val Thr Phe Pro	Asn Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly					
	530			535		540
Ser Leu Ala Val	Arg Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val					
	545			550		555
Ala Pro His Ile	Asp Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser					
	565			570		575
Arg Phe Thr Asp	Tyr Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser					
	580			585		590
Leu Ser Glu Asn	Ala Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu					
	595			600		605
Thr Pro Glu Val	Ile Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Leu					
	610			615		620

<210>1090

<211>310

<212>PRT

<213>Chlamydia pneumoniae

<400>1090

Met Arg Lys Leu Ile Leu Cys Asn Pro Arg Gly Phe Cys Ser Gly Val
 1 5 10 15
 Val Arg Ala Ile Gln Val Val Glu Val Ala Leu Glu Lys Trp Gly Ala
 20 25 30
 Pro Ile Tyr Val Lys His Glu Ile Val His Asn Arg His Val Val Asn
 35 40 45
 Ala Leu Arg Ala Lys Gly Ala Ile Phe Val Glu Glu Leu Val Asp Val
 50 55 60
 Pro Glu Gly Glu Arg Val Ile Tyr Ser Ala His Gly Ile Pro Pro Ser
 65 70 75 80
 Val Arg Ala Glu Ala Lys Ala Arg Lys Leu Ile Asp Ile Asp Ala Thr
 85 90 95
 Cys Gly Leu Val Thr Lys Val His Ser Ala Ala Lys Leu Tyr Ala Ser
 100 105 110
 Lys Gly Tyr Lys Ile Ile Leu Ile Gly His Lys Lys His Val Glu Val
 115 120 125
 Ile Gly Ile Val Gly Glu Val Pro Glu His Ile Thr Val Val Glu Lys
 130 135 140
 Val Ala Asp Val Glu Ala Leu Pro Phe Ser Ser Asp Thr Pro Leu Phe
 145 150 155 160
 Tyr Ile Thr Gln Thr Thr Leu Ser Leu Asp Asp Val Gln Glu Ile Ser
 165 170 175
 Ser Ala Leu Leu Lys Arg Tyr Pro Ser Ile Ile Thr Leu Pro Ser Ser
 180 185 190
 Ser Ile Cys Tyr Ala Thr Thr Asn Arg Gln Lys Ala Leu Arg Ser Val
 195 200 205
 Leu Ser Arg Val Asn Tyr Val Tyr Val Val Gly Asp Val Asn Ser Ser
 210 215 220
 Asn Ser Asn Arg Leu Arg Glu Val Ala Leu Arg Arg Gly Val Pro Ala
 225 230 235 240
 Asp Leu Ile Asn Asn Pro Glu Asp Ile Asp Thr Asn Ile Val Asn His
 245 250 255
 Ser Gly Asp Ile Ala Met Thr Ala Gly Ala Ser Thr Pro Glu Asp Val
 260 265 270
 Val Gln Ala Cys Ile Arg Lys Leu Ser Ser Leu Ile Pro Gly Leu Gln
 275 280 285
 Val Glu Asn Asp Ile Phe Ala Val Glu Asp Val Val Phe Gln Leu Pro
 290 295 300
 Lys Glu Leu Arg Cys Ser
 305 310

<210>1091

<211>245

<212>PRT

<213>Chlamydia pneumoniae

<400>1091

Arg Met Ser Tyr Phe Asn Tyr Gln Lys Asn Ser Val Val Leu Arg Ser
 1 5 10 15
 Leu Gly Leu Leu Ala Lys Phe Phe Ser Arg Leu Leu Tyr Arg Val Phe
 20 25 30
 Phe Ser Phe Arg Glu Gly Ile Tyr Leu Phe Ser Ser Leu Tyr Leu Lys
 35 40 45
 Tyr Pro Arg Leu Phe Phe Tyr Asp Leu Gly Lys Tyr Val Tyr Ser Leu
 50 55 60
 Arg His Cys Pro Tyr Ala Lys Leu Gly Arg Leu Pro Gly Ala Ser Leu
 65 70 75 80
 Leu Lys Glu Gly Asn Val Tyr Gly Glu Thr Pro Trp Ser Val Leu Ala
 85 90 95
 Lys Ile Cys Gln Ala Phe Asp Ile Thr Ser Gln Asp Ile Leu Tyr Asp
 100 105 110
 Leu Gly Cys Gly Leu Gly Lys Val Cys Phe Trp Phe Ser His Val Val
 115 120 125
 Arg Cys Gln Val Ile Gly Ile Asp Asn Gln Pro His Phe Ile Arg Phe
 130 135 140
 Ser Ser Asn Met His Arg Lys Leu Ser Ser Gly Phe Ala Leu Phe Asp

145		150		155		160									
Thr	Glu	Glu	Phe	Lys	Asn	Val	Val	Leu	Ser	Gln	Ala	Ser	Tyr	Val	Tyr
		165						170						175	
Phe	Tyr	Gly	Ser	Ser	Phe	Ser	Arg	Arg	Leu	Leu	Asn	Glu	Ile	Ile	Leu
		180						185					190		
Lys	Leu	Ser	Glu	Met	Ala	Pro	Gly	Ser	Val	Val	Ile	Ser	Ile	Ser	Phe
		195						200				205			
Pro	Leu	Asp	Ser	Phe	Ser	Arg	Gly	Lys	Glu	Cys	Phe	Phe	Thr	Glu	Lys
		210				215					220				
Ser	Cys	Ser	Val	Arg	Phe	Pro	Trp	Gly	Lys	Thr	Ile	Ala	Tyr	Lys	Asn
		225				230				235					240
Ile	Arg	Lys	Gly	Ser											
				245											

<210>1092

<211>385

<212>PRT

<213>Chlamydia pneumoniae

<400>1092

Lys	Ser	Leu	Ser	Ala	Glu	Ser	Thr	Ser	Ser	Asn	Ser	Thr	Gly	Lys	Ala
1				5					10					15	
Ser	Thr	Glu	Thr	Thr	Ser	Ser	Ser	Phe	Pro	Phe	Phe	Ser	Cys	Lys	Ala
			20					25					30		
Pro	Glu	Gly	Asp	Ser	Ser	Val	Asp	Lys	Thr	Phe	Thr	Val	Ser	Val	Gln
		35					40					45			
Thr	Pro	Lys	Ala	Gln	Glu	Gln	Gln	Glu	Ala	Ser	Ala	Ser	Gln	Ser	Gln
	50					55					60				
Ala	Gln	Phe	His	Val	Arg	Ser	Tyr	Ser	Ser	Ser	Thr	Ile	Lys	Glu	His
	65				70					75				80	
Ser	Ala	Lys	Glu	Lys	Val	Ser	Gln	Ser	Thr	Lys	Ser	Ala	Glu	Thr	Gln
			85						90					95	
Lys	His	Thr	Gln	Thr	Lys	Ser	Asp	Ala	Thr	Leu	Ser	Pro	Met	Ser	Leu
		100					105					110			
Tyr	Ser	Thr	Leu	His	Lys	Glu	Val	Pro	Gln	Ala	Leu	Ser	Ser	Thr	Lys
		115					120					125			
Ser	Gln	Gln	Lys	Asp	Glu	Glu	His	Arg	Asp	Gln	Arg	Gln	Gln	Glu	Gly
	130					135				140					
Tyr	Glu	Gln	Glu	Gln	Glu	Gln	Glu	Glu	Gly	Lys	Lys	Lys	Thr	Pro	Trp
	145					150				155				160	
Cys	Thr	Val	Glu	Ser	Leu	Gln	Gln	Thr	Ser	Ser	Ser	Asn	Gln	Val	Tyr
			165						170					175	
Glu	Ser	Tyr	Thr	Pro	Ile	Ile	Pro	Asp	Pro	Ile	Val	Glu	Phe	Ala	Leu
		180						185					190		
Ser	Glu	Ser	Gln	Leu	Ser	Val	Leu	Ala	Gly	Lys	Arg	Val	Thr	Asn	Leu
		195					200					205			
Asp	Val	Leu	Arg	Ile	Cys	Thr	Glu	Leu	Met	Lys	Leu	Met	Leu	Lys	Ser
	210					215					220				
Arg	Ala	Asn	Asp	Thr	Met	Thr	Arg	Leu	Glu	Glu	Arg	Glu	Leu	Met	Glu
	225					230					235				240
Arg	Glu	Ala	His	Glu	Leu	Ala	Ala	Ser	Tyr	Ser	Arg	Gln	Ala	Lys	Tyr
			245						250					255	
Ala	Arg	Trp	Leu	Gly	Ile	Ala	Thr	Ala	Thr	Leu	Gly	Ile	Leu	Gly	Ala
		260					265						270		
Ile	Ala	Pro	Met	Val	Gly	Glu	Ile	Ser	Gly	Asp	Ser	Ile	Leu	Gly	Phe
		275					280					285			
Val	Gln	Arg	Ile	Ser	Gly	Arg	Phe	Lys	Asp	Ala	Thr	Ala	Lys	Thr	Phe
	290					295					300				
Phe	Lys	Gly	Ile	Gly	Lys	Val	Phe	Thr	Ser	Leu	Ser	Gln	Leu	Thr	Glu
	305					310				315				320	
Ala	Ala	Ser	Lys	Val	His	Glu	Leu	Ser	Glu	Ser	Ala	Val	Arg	Ala	Val
			325						330					335	
Ala	Glu	Tyr	Arg	Lys	Glu	Val	Phe	Arg	Met	Arg	Gln	Asp	Glu	Val	Thr
		340					345					350			
Arg	Thr	Ile	Glu	Glu	Val	Lys	Asp	Asn	Trp	Lys	Ser	Met	Asp	Asn	Phe
		355					360					365			

Leu Leu Asn Ile Leu Gln Thr Glu His Asp Ala Ala Arg Ser Leu Tyr
 370 375 380
 Gln
 385
 <210>1093
 <211>112
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1093
 Ile His Arg Arg Xaa Ile Met Thr Val Ser Tyr Gln Ser Ile Ser Thr
 1 5 10 15
 Pro Pro Pro Glu Gly Glu Phe Asp Ile Phe Val Asp Gly Asn Ala Thr
 20 25 30
 Glu Glu Ala Val Val Ala Ala Glu Val Gln Val Ala Leu Pro Ala Gly
 35 40 45
 Glu Gln Tyr Ala Met Leu Arg Ala Thr Ser Glu Leu Cys Phe Gly Ile
 50 55 60
 Xaa Thr Gln Ser Glu Cys Ala Leu Thr Gln Ala Leu Pro Pro Lys Glu
 65 70 75 80
 Lys Thr Ile Thr Arg Arg Ala Ile Ser Ser Lys Lys Trp His Ile Asn
 85 90 95
 Ala Ile Asn Ile Ser Ala Glu Pro Lys Thr Arg Thr Ile Ala Ala Asp
 100 105 110
 <210>1094
 <211>515
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1094
 Cys Gly Asn Ser Thr Met Ser Ser Trp Leu Ser Gln Ala Ser Glu Val
 1 5 10 15
 Leu Leu Asn Gln Asp Pro Tyr Ile Pro Asp Ala Pro Arg Ser Gln Glu
 20 25 30
 Ser Ser Val Pro Lys Ile Ser Tyr Ser Ile Thr Val Ala Pro Gln Glu
 35 40 45
 Ala Gln Lys Ser Leu Pro Lys Phe Phe Thr Gln Lys Phe Gln Ser Gln
 50 55 60
 Cys Lys Ser Glu Pro Pro Ile Thr His His Lys Thr Phe Ile Ile Ala
 65 70 75 80
 Thr Pro Arg Glu Arg Ile Leu Arg Phe Gly Ser Ser Phe Glu Ser Gln
 85 90 95
 Leu His Asn Thr Ser Gln Ala Gln Thr Ser Ser Pro Trp Asn Leu Phe
 100 105 110
 Ser Gln Lys Asn Ser Thr Glu Ala Ser Lys Ala Leu Met Gln Glu Leu
 115 120 125
 Thr Met Pro Lys Ser Pro Glu Lys Thr Ser Glu Lys Ala Leu Asp Lys
 130 135 140
 Asn Leu Ser Ser Lys Gln Glu Gly Ser Cys Lys Asn Phe Asp Thr Leu
 145 150 155 160
 His Leu Gln Gln His Leu Lys Leu Phe Gly Thr Val Asp Ser Leu Tyr
 165 170 175
 Ser Gln Ser Leu Asp Ser Glu Gln Gln Glu Leu Leu Gln Ser Arg Arg
 180 185 190
 Glu Glu Arg Ser Glu Thr Tyr Ala Asn Gln Gln Ser Ser Glu Lys Lys
 195 200 205
 Ile Glu Thr Lys Val Gln Ile Lys Asp Leu Cys Lys Asp Leu Phe Ser
 210 215 220
 Gln Asp Gln Asp Ser Asn Gln Lys Gln Lys Lys Ser Pro Phe Gln Gln
 225 230 235 240
 Asp Thr Ser Arg Lys Asn Arg Ile Ala Lys Ala Ala Gln Ala Val Pro
 245 250 255
 Val Ile Pro Pro Pro Ser Ile Gly Val Phe Thr Leu Ser Tyr Leu Leu
 260 265 270
 Thr Lys Gln Gly Ile Leu Ser Asp Phe Ser Ser Tyr Gly Cys His Lys
 275 280 285

Asp Ser Val Glu Ser Thr Gln Arg Glu Leu Asp Ala Leu His Glu Lys
 290 295 300
 Arg Ile Glu Thr Ile Lys Val Ser Ile Glu Lys Glu Lys Arg Glu Arg
 305 310 315 320
 Leu Trp Gly Ser Leu Ser Asp Ile Ile Gly Trp Leu Ala Pro Phe Val
 325 330 335
 Ser Ile Gly Ile Gly Ile Val Ala Ile Leu Ser Gly Gly Gly Ile Phe
 340 345 350
 Ala Phe Ala Gly Phe Phe Ala Gly Leu Ile Ser Leu Val Ile Lys Cys
 355 360 365
 Leu Glu Lys Leu Lys Phe Trp Asp Trp Leu Glu Lys His Leu Pro Ile
 370 375 380
 Asn Asn Glu Glu Leu Arg Arg Lys Ile Ile Thr Ile Ile Gln Trp Val
 385 390 395 400
 Val Tyr Leu Thr Pro Val Ile Leu Ser Ile Cys Thr Leu Lys Val Glu
 405 410 415
 Asn Leu Gly Phe Ser Pro Ile Ile Glu Gly Ala Ile Lys Gly Ile Gln
 420 425 430
 Pro Ala Ile Glu Ser Thr Met Ala Ala Leu Arg Cys Ala Ile Leu Phe
 435 440 445
 Ser Gln Ala Glu Ile Tyr Lys Leu Lys Gly Lys Leu Thr Lys Ile Gln
 450 455 460
 Leu Asp Ile Glu Leu Lys Ser Phe Asp Arg Asp Asp His Tyr Glu Arg
 465 470 475 480
 Ser Gln Glu Leu Leu Asp Asn Met Glu Ser Ser Phe Glu Ala Leu Ser
 485 490 495
 Arg Ile Leu Asn Tyr Met Arg Glu Leu Asp Gln Val Tyr Leu His Ser
 500 505 510
 Leu Arg Gly
 515

<210>1095

<211>191

<212>PRT

<213>Chlamydia pneumoniae

<400>1095

Cys Ile Glu Val Ile Glu Arg Thr Tyr Gly His Leu His Leu Gln Pro
 1 5 10 15
 Thr Pro Leu Met Ser His Leu Asn Tyr Leu Leu Glu Lys Ile Ala Ala
 20 25 30
 Ser Ser Lys Glu Asp Phe Pro Phe Pro Asp Asp Leu Glu Ser Tyr Leu
 35 40 45
 Glu Gly Tyr Val Pro Asp Lys Asn Ile Ala Leu Asp Thr Tyr Gln Lys
 50 55 60
 Ile Phe Lys Ile Ser Ser Glu Asp Leu Glu Lys Val Tyr Lys Glu Gly
 65 70 75 80
 Tyr His Ala Tyr Leu Asp Lys Asp Tyr Ala Lys Ser Ile Thr Val Phe
 85 90 95
 Arg Trp Leu Val Phe Phe Asn Pro Phe Val Ser Lys Phe Trp Phe Ser
 100 105 110
 Leu Gly Ala Ser Leu His Met Ser Glu Gln Tyr Ser Gln Ala Leu His
 115 120 125
 Ala Tyr Gly Val Thr Ala Val Leu Arg Asp Lys Asp Pro Tyr Pro His
 130 135 140
 Tyr Tyr Ala Tyr Ile Cys Tyr Thr Leu Thr Asn Glu His Glu Glu Ala
 145 150 155 160
 Glu Lys Ala Leu Glu Met Ala Trp Val Arg Ala Gln His Lys Pro Leu
 165 170 175
 Tyr Asn Glu Leu Lys Glu Glu Ile Leu Asp Ile Arg Lys His Lys
 180 185 190

<210>1096

<211>339

<212>PRT

<213>Chlamydia pneumoniae

<400>1096

Thr Thr Ala Ser Ser Ser Asn Thr Lys Arg Leu Cys Cys Lys Lys Thr
 1 5 10 15
 Gln Arg Arg Pro Ser Pro Glu Thr Gln Ala Arg Ala Ser Leu Ser Gln
 20 25 30
 Ala Ser Ser Ser Ser Gln Arg Ser Leu Pro Pro Gln Glu Ser Ala Pro
 35 40 45
 Glu Arg Thr Leu Leu Glu Gln Lys Ala Ser Ser Phe Ser Pro Leu
 50 55 60
 Ser Gln Phe Ser Ala Glu Lys Gln Lys Glu Ala Leu Thr Thr Ser Lys
 65 70 75 80
 Ser His Glu Leu Tyr Lys Glu Arg Asp Gln Asp Arg Gln Gln Arg Glu
 85 90 95
 Gln His Asp Arg Lys His Asp Gln Glu Glu Asp Ala Glu Ser Lys Lys
 100 105 110
 Lys Lys Lys Lys Arg Gly Leu Gly Val Glu Ala Val Ala Glu Glu Pro
 115 120 125
 Gly Glu Asn Leu Asp Ile Ala Ala Leu Ile Phe Ser Asp Gln Met Arg
 130 135 140
 Pro Pro Ala Glu Glu Thr Ser Xaa Lys Glu Thr Thr Phe Lys Lys Lys
 145 150 155 160
 Leu Pro Ser Pro Met Ser Val Phe Ser Arg Phe Ile Pro Ser Lys Asn
 165 170 175
 Pro Leu Ser Val Gly Ser Ser Ile His Xaa Pro Ile Gln Thr Pro Lys
 180 185 190
 Val Glu Asn Val Phe Leu Arg Phe Met Lys Leu Met Ala Arg Ile Leu
 195 200 205
 Gly Gln Ala Glu Ala Glu Ala Asn Glu Leu Tyr Met Arg Val Lys Gln
 210 215 220
 Arg Thr Asp Asp Val Asp Thr Leu Thr Val Leu Ile Ser Lys Ile Asn
 225 230 235 240
 Asn Glu Lys Lys Asp Ile Asp Trp Ser Glu Asn Glu Glu Met Lys Ala
 245 250 255
 Leu Leu Asn Arg Ala Lys Glu Ile Gly Val Thr Ile Asp Lys Glu Lys
 260 265 270
 Tyr Thr Trp Thr Glu Glu Glu Lys Arg Leu Leu Lys Glu Asn Val Gln
 275 280 285
 Met Arg Lys Glu Asn Met Glu Lys Ile Thr Gln Met Glu Arg Thr Asp
 290 295 300
 Met Gln Arg His Leu Gln Glu Ile Ser Gln Cys His Gln Ala Arg Ser
 305 310 315 320
 Asn Val Leu Lys Leu Leu Lys Glu Leu Met Asp Thr Phe Ile Tyr Asn
 325 330 335
 Leu Arg Pro

<210>1097

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>1097

Phe Ser Phe Phe Phe Tyr Ala Leu Lys Leu Gln Ile Met Asn Met Pro
 1 5 10 15
 Val Pro Ser Ala Val Pro Ser Ala Asn Ile Thr Leu Lys Glu Asp Ser
 20 25 30
 Ser Thr Val Ser Thr Ala Ser Gly Ile Leu Lys Thr Ala Thr Gly Glu
 35 40 45
 Val Leu Val Ser Cys Thr Ala Leu Glu Gly Ser Ser Thr Asp Ala
 50 55 60
 Leu Ile Ser Leu Ala Leu Gly Gln Ile Ile Leu Ala Thr Gln Gln Glu
 65 70 75 80
 Leu Leu Leu Gln Ser Thr Asn Val His Gln Leu Leu Phe Leu Pro Pro
 85 90 95
 Glu Val Val Glu Leu Glu Ile Gln Val Val Asp Leu Leu Val Gln Leu
 100 105 110
 Glu His Ala Glu Thr Ile Thr Ser Glu Pro Gln Glu Thr Gln Thr Gln

115 120 125
 Ser Arg Ser Glu Gln Thr Leu Pro Gln Gln Ser Ser Ser Lys Gln Ser
 130 135 140
 Ala Leu Ser Pro Arg Ser Leu Lys Pro Glu Ile Ser Asp Ser Lys Gln
 145 150 155 160
 Gln Gln Ala Leu Gln Thr Pro Lys Asp Ser Ala Val Arg Lys His Ser
 165 170 175
 Glu Asp Arg His Leu Arg His Lys Leu Ala Leu Pro Tyr Leu Arg Gln
 180 185 190
 Ala Gln Val Leu Arg Asp Pro Tyr Leu Arg Lys Lys Val Arg Gln Lys
 195 200 205
 Glu His Tyr
 210

<210>1098

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1098

Ile Phe Leu Glu Ile Phe Ile Met Lys Lys Val Val Thr Leu Ser Ile
 1 5 10 15
 Ile Phe Phe Ala Thr Tyr Cys Ala Ser Glu Leu Ser Ala Val Thr Val
 20 25 30
 Val Ala Val Pro Leu Ser Glu Ala Pro Gly Lys Ile Gln Val Arg Pro
 35 40 45
 Val Val Gly Leu Gln Phe Gln Glu Glu Gln Gly Ser Val Pro Tyr Ser
 50 55 60
 Phe Tyr Tyr Pro Tyr Asp Tyr Gly Tyr Tyr Tyr Pro Glu Thr Tyr Gly
 65 70 75 80
 Tyr Thr Lys Asn Thr Gly Gln Glu Ser Arg Glu Cys Tyr Thr Arg Phe
 85 90 95
 Glu Asp Gly Thr Ile Phe Tyr Glu Cys Asp
 100 105

<210>1099

<211>301

<212>PRT

<213>Chlamydia pneumoniae

<400>1099

Met Thr Met Pro Ser Thr Gln Phe His Thr Thr Ile Leu Glu Gln Phe
 1 5 10 15
 Ser Leu Phe Leu Ser Val Asp Arg Gly Leu Cys Gln Gln Ser Ile Ala
 20 25 30
 Ala Tyr Arg Gln Asp Ile Ser Ser Phe Leu Thr Ile Ser Ala Ile Ser
 35 40 45
 Ser Pro Gln Asp Ile Ser Gln Asn Ser Val Tyr Ile Phe Ala Glu Glu
 50 55 60
 Leu Tyr Arg Arg Lys Glu Ala Glu Thr Thr Leu Ala Arg Arg Leu Ile
 65 70 75 80
 Ala Leu Lys Val Phe Phe Leu Phe Leu Lys Asp Gln Gln Leu Leu Pro
 85 90 95
 Tyr Pro Pro Ile Glu His Pro Lys Ile Trp Lys Arg Leu Pro Ser
 100 105 110
 Val Leu Thr Pro Gln Glu Val Asp Ala Leu Leu Ala Val Pro Leu Gln
 115 120 125
 Met Glu Lys Asn Pro Arg His Leu Ala Phe Arg Asp Thr Ala Ile Leu
 130 135 140
 His Thr Leu Tyr Ser Thr Gly Val Arg Val Ser Glu Leu Cys Asp Leu
 145 150 155 160
 Arg Leu Gly His Val Ser Asp Asp Cys Ile Arg Val Thr Gly Lys Gly
 165 170 175
 Ser Lys Thr Arg Leu Val Pro Leu Gly Ser Arg Ala Arg Glu Ala Ile
 180 185 190
 Asp Ala Tyr Leu Cys Pro Phe Arg Asp Gln Tyr Gln Lys Lys Asn Pro
 195 200 205
 His Glu Asp His Leu Phe Leu Ser Thr Arg Gly His Lys Leu Glu Arg

210 215 220
 Ser Cys Val Trp Arg Arg Ile His Asn Tyr Ala Lys Gln Val Thr Ser
 225 230 235 240
 Lys Pro Val Ser Pro His Ser Leu Arg His Ala Phe Ala Thr His Leu
 245 250 255
 Leu Asp Asn Lys Ala Asp Leu Arg Val Ile Gln Glu Met Leu Gly His
 260 265 270
 Ala Arg Ile Ala Ser Thr Glu Val Tyr Thr His Val Ala Ala Asp Ser
 275 280 285
 Leu Ile Glu Lys Phe Leu Ala His His Pro Arg Asn Leu
 290 295 300
 <210>1100
 <211>553
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1100
 Val Glu Gly Ile Val Ile Leu Ala Asn Glu Cys Asn Phe Ser Ile Gly
 1 5 10 15
 Ser Gly Glu Phe Ser Ser Tyr Arg Glu Lys Thr Met Glu Arg Lys Arg
 20 25 30
 Phe Ile Asp Cys Asp Ser Thr Lys Ile Leu Gln Glu Leu Ala Leu Asn
 35 40 45
 Pro Leu Asp Leu Thr Ala Pro Gly Val Leu Ser Ala Glu Arg Ile Lys
 50 55 60
 Lys Phe Ser Leu Leu Gly Gly Gly Phe Thr Phe Ser Phe Ala Thr Glu
 65 70 75 80
 Arg Leu Asp Asp Ala Ile Leu Ala Ala Leu Ile Ser Leu Ala Glu Glu
 85 90 95
 Arg Gly Leu His Glu Ser Met Leu Ala Met Gln Gln Gly Gln Val Val
 100 105 110
 Asn Tyr Ile Glu Gly Phe Pro Ser Glu Met Arg Pro Ala Leu His Thr
 115 120 125
 Ala Thr Arg Ala Trp Val Thr Asp Ser Ser Phe Thr Gly Glu Ala Glu
 130 135 140
 Asp Ile Ala Val Arg Ser Arg Val Glu Ala Gln Arg Leu Lys Asp Phe
 145 150 155 160
 Leu Thr Lys Val Arg Ser Gln Phe Thr Thr Ile Val Gln Ile Gly Ile
 165 170 175
 Gly Gly Ser Glu Leu Gly Pro Lys Ala Leu Tyr Arg Ala Leu Arg Ala
 180 185 190
 Tyr Cys Pro Thr Asp Lys His Val His Phe Ile Ser Asn Ile Asp Pro
 195 200 205
 Asp Asn Gly Ala Glu Val Leu Asp Thr Ile Asp Cys Ala Lys Ala Leu
 210 215 220
 Val Val Val Val Ser Lys Ser Gly Thr Thr Ile Glu Thr Ala Val Asn
 225 230 235 240
 Glu Ala Phe Phe Ala Asp Tyr Phe Ala Lys Lys Gly Leu Ser Phe Lys
 245 250 255
 Asp His Phe Ile Ala Val Thr Cys Glu Gly Ser Pro Met Asp Asp Thr
 260 265 270
 Gly Lys Tyr Leu Glu Val Phe His Leu Trp Glu Ser Ile Gly Gly Arg
 275 280 285
 Phe Ser Ser Thr Ser Met Val Gly Gly Val Val Leu Gly Phe Ala Tyr
 290 295 300
 Gly Phe Glu Val Phe Leu Gln Leu Leu Gln Gly Ala Ser Ala Met Asp
 305 310 315 320
 Gln Ile Ala Leu Gln Pro Asn Ala Arg Glu Asn Leu Pro Met Leu Ser
 325 330 335
 Ala Leu Ile Ser Ile Trp Asn Arg Asn Phe Leu Gly Tyr Pro Thr Glu
 340 345 350
 Ala Val Ile Pro Tyr Ser Ser Gly Leu Glu Phe Phe Pro Ala His Leu
 355 360 365
 Gln Gln Cys Cys Met Glu Ser Asn Gly Lys Ser Ile Val Gln Asp Gly
 370 375 380

Arg Arg Val Gly Phe Ser Thr Ser Pro Val Ile Trp Gly Glu Pro Gly
 385 390 395 400
 Thr Asn Gly Gln His Ser Phe Phe Gln Cys Leu His Gln Gly Thr Asp
 405 410 415
 Ile Ile Pro Val Glu Phe Ile Gly Phe Glu Lys Ser Gln Lys Gly Glu
 420 425 430
 Asp Ile Ser Phe Gln Gly Thr Thr Ser Ser Gln Lys Leu Phe Ala Asn
 435 440 445
 Met Ile Ala Gln Ala Ile Ala Leu Ala Cys Gly Ser Glu Asn Thr Asn
 450 455 460
 Pro Asn Lys Asn Phe Asp Gly Asn Arg Pro Ser Ser Val Leu Val Ser
 465 470 475 480
 Ser Gln Leu Asn Pro Tyr Ser Leu Gly Glu Leu Leu Ser Tyr Tyr Glu
 485 490 495
 Asn Lys Ile Val Phe Gln Gly Phe Cys Trp Gly Ile Asn Ser Phe Asp
 500 505 510
 Gln Glu Gly Val Ser Leu Gly Lys Ala Leu Ala Asn Arg Val Leu Glu
 515 520 525
 Leu Leu Glu Gly Ala Asp Ala Ser Asn Phe Pro Glu Ala Ala Ser Leu
 530 535 540
 Leu Thr Leu Phe Asn Ile Lys Phe Arg
 545 550
 <210>1101
 <211>523
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1101
 Asn Met Pro Gly Ser Val Ser Ser Pro Pro Leu Ser Pro Val Ile Val
 1 5 10 15
 Arg Glu Arg Val Pro Ser Ser Ser Gly Ser Asp Leu Ile Gln Pro His
 20 25 30
 Ala Val Leu Lys Ile Ser Ile Leu Ile Phe Ala Leu Val Thr Ile Leu
 35 40 45
 Gly Ile Val Leu Val Val Ser Ala Leu Gly Ala Leu Pro Ser Leu
 50 55 60
 Val Leu Thr Val Ser Gly Cys Ile Ala Ile Ala Val Gly Leu Ile Gly
 65 70 75 80
 Leu Gly Ile Leu Val Thr Arg Leu Ile Leu Ser Thr Ile Arg Lys Val
 85 90 95
 Asp Ala Met Gly Tyr Asp Ala Ala Val Lys Glu Glu Gln Tyr Leu Ser
 100 105 110
 Arg Ile Arg Glu Leu Glu Ser Glu Asn Arg Glu Ile Arg Asp Arg Asn
 115 120 125
 Arg Ala Val Glu Asp Gln Cys Ala His Leu Ser Glu Glu Asn Lys Asp
 130 135 140
 Leu Arg Asp Pro Glu Tyr Leu His Gly Met Thr Glu Arg Leu Ile Ala
 145 150 155 160
 Ser Leu Glu Ile Glu Asn Gln Ala Leu Val Ala Glu Asn Ile Leu Leu
 165 170 175
 Lys Asp Trp Asn Ala Ser Leu Ser Arg Asp Phe Arg Ala Tyr Lys Gln
 180 185 190
 Lys Phe Pro Leu Gly Ala Leu Glu Pro Trp Lys Glu Asp Ile Ala Cys
 195 200 205
 Ile Met Glu Gln Asn Leu Phe Leu Lys Pro Glu Cys Ile Ala Met Val
 210 215 220
 Lys Ser Leu Pro Leu Glu Thr Gln Arg Leu Phe Leu Tyr Pro Lys Gly
 225 230 235 240
 Phe Gln Ser Leu Val Asn Arg Phe Ala Pro Arg Ser Arg Phe Phe Gln
 245 250 255
 Thr Pro Lys Tyr Glu Tyr Asn Ser Arg Asn Glu Asn Glu Asp Gly Lys
 260 265 270
 Val Ala Ala Val Cys Ala Arg Leu Lys Lys Glu Phe Phe Ser Ala Val
 275 280 285
 Leu Gly Ala Cys Ser Tyr Glu Glu Leu Gly Gly Ile Cys Glu Arg Ala

290 295 300
 Val Ala Leu Lys Glu Thr Leu Pro Leu Pro Glu Ala Val Tyr Asp Thr
 305 310 315 320
 Leu Val Gln Glu Phe Pro Asn Leu Leu Thr Ala Glu Ser Leu Trp Lys
 325 330 335
 Glu Trp Cys Phe Tyr Ser Tyr Pro Tyr Leu Arg Pro Tyr Leu Ser Val
 340 345 350
 Asp Tyr Cys Lys Arg Leu Phe Val Gln Leu Phe Glu Glu Leu Cys Leu
 355 360 365
 Lys Leu Phe Thr Thr Gly Ser Pro Glu Asp Gln Ala Leu Val Arg Leu
 370 375 380
 Phe Ser Tyr Tyr Arg Asn His Ile Pro Ala Val Leu Ala Ser Phe Gly
 385 390 395 400
 Leu Pro Pro Pro Glu Thr Gly Gly Ser Val Phe Val Leu Leu Pro Lys
 405 410 415
 Gln Glu Asn Leu Leu Trp Ser Gln Ile Glu Val Leu Ala Thr Arg Tyr
 420 425 430
 Leu Lys Asp Thr Phe Val Arg Asn Ser Glu Trp Thr Gly Ser Phe Glu
 435 440 445
 Met Met Phe Ser Tyr Asn Glu Met Cys Lys Glu Ile Ser Glu Gly Arg
 450 455 460
 Ile Arg Phe Ala Glu Asp Tyr Glu Thr Arg His Ser Glu Glu Phe Pro
 465 470 475 480
 Pro Ser Pro Leu Ser Glu Glu Gly Glu Gly Glu Glu Phe Leu Pro Pro
 485 490 495
 Cys Ser Glu Glu Glu Val Ser Val Leu Glu Arg Pro Asp Leu Asp Val
 500 505 510
 Asp Ser Met Trp Val Trp His Pro Ser Gly Pro
 515 520
 <210>1102
 <211>335
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1102
 Phe Phe Leu Lys Gly Val Arg Met Ala Phe Lys Glu Val Val Arg Val
 1 5 10 15
 Ala Val Thr Gly Gly Lys Gly Gln Ile Ala Tyr Asn Phe Leu Phe Ala
 20 25 30
 Leu Ala His Gly Asp Val Phe Gly Val Asp Arg Gly Val Asp Leu Arg
 35 40 45
 Ile Tyr Asp Val Pro Gly Thr Glu Arg Ala Leu Ser Gly Val Arg Met
 50 55 60
 Glu Leu Asp Asp Gly Ala Tyr Pro Leu Xaa His Arg Leu Arg Val Thr
 65 70 75 80
 Thr Ser Leu Asn Asp Ala Phe Asp Gly Ile Asp Ala Ala Phe Leu Ile
 85 90 95
 Gly Ala Val Pro Arg Gly Pro Gly Met Glu Arg Gly Asp Leu Leu Lys
 100 105 110
 Gln Asn Gly Gln Ile Phe Ser Leu Gln Gly Ala Ala Leu Asn Thr Ala
 115 120 125
 Ala Lys Arg Asp Ala Lys Ile Phe Val Val Gly Asn Pro Val Asn Thr
 130 135 140
 Asn Cys Trp Ile Ala Met Lys His Ala Pro Arg Leu His Arg Lys Asn
 145 150 155 160
 Phe His Ala Met Leu Arg Leu Asp Gln Asn Arg Met His Ser Met Leu
 165 170 175
 Ala His Arg Ala Glu Val Pro Leu Glu Val Ser Arg Val Val Ile
 180 185 190
 Trp Gly Asn His Ser Ala Lys Gln Val Pro Asp Phe Thr Gln Ala Arg
 195 200 205
 Ile Ser Gly Lys Pro Ala Ala Glu Val Ile Gly Asp Arg Asp Trp Leu
 210 215 220
 Glu Asn Ile Leu Val His Ser Val Gln Asn Arg Gly Ser Ala Val Ile
 225 230 235 240

Glu Ala Arg Gly Lys Ser Ser Ala Ala Ser Ala Ser Arg Ala Leu Ala
 245 250 255
 Glu Ala Ala Arg Ser Ile Phe Cys Pro Lys Ser Asp Glu Trp Phe Ser
 260 265 270
 Ser Gly Val Cys Ser Asp His Asn Pro Tyr Gly Ile Pro Glu Asp Leu
 275 280 285
 Ile Phe Gly Phe Pro Cys Arg Met Leu Pro Ser Gly Asp Tyr Glu Ile
 290 295 300
 Ile Pro Gly Leu Pro Trp Glu Pro Phe Ile Arg Asn Lys Ile Gln Ile
 305 310 315 320
 Ser Leu Asp Glu Ile Ala Gln Glu Lys Ala Ser Val Ser Ser Leu
 325 330 335

<210>1103

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1103

Ser Glu His Thr Pro Glu Glu Asn His Ser Ser Leu Leu Gly Gln Lys
 1 5 10 15
 Ile Asp Arg Ala Ala Ser Ala Ser Ala Arg Asp Ala Asp Ala Ala Glu
 20 25 30
 Asp Phe Pro Leu Ala Ser Ile Thr Ala Leu Pro Arg Phe Cys Thr Glu
 35 40 45
 Cys Thr Lys Met Phe Ser Asn Gln Ser Arg Ser Pro Ile Thr Ser Ala
 50 55 60
 Ala Gly Phe Pro Glu Ile Arg Ala Cys Val Lys Ser Gly Thr Cys Phe
 65 70 75 80
 Ala Glu

<210>1104

<211>275

<212>PRT

<213>Chlamydia pneumoniae

<400>1104

Ser Xaa Cys Ala Ser Lys Ala Leu Asn Val Pro Ile Val Ile Ser Gln
 1 5 10 15
 Gly Ile Leu Arg Pro Ala Ile Asp Glu Asp Gln Ala Gln Leu Phe Thr
 20 25 30
 Glu Arg Val Glu Glu Phe Pro Lys Glu Val Glu Trp Trp Glu Xaa Ala
 35 40 45
 Arg Cys Glu Ile Ser Ile Pro Ser Met Val Ile Pro Pro Asn Leu Gly
 50 55 60
 Ala Leu Phe Ile Lys Ser Gly Val Thr Leu Asn Asn Asp Leu Tyr Ile
 65 70 75 80
 Gln Gly Leu Ala Asp Ala Cys Met Lys Leu Gly Thr Gln Phe Tyr Asp
 85 90 95
 Glu Leu Ile Glu Asp Leu Ala Asp Ile Glu Glu Phe Tyr Asp His Ile
 100 105 110
 Ile Val Thr Pro Gly Ala Asn Ala Ser Ile Leu Pro Glu Leu Lys Asp
 115 120 125
 Met Pro Val Asn Lys Val Lys Gly Gln Leu Leu Glu Ile Ser Trp Pro
 130 135 140
 Lys Asp Leu Ala Met Leu Ser Phe Ser Ile Asn Ala His Lys Tyr Met
 145 150 155 160
 Val Ala Asn Thr Gln Lys Asn Thr Cys Ile Leu Gly Ala Thr Phe Glu
 165 170 175
 His Asn Gln Pro Glu Glu Thr Pro Asp Pro Ala Ile Ala Tyr Gln Glu
 180 185 190
 Ile Met Pro Pro Val Leu Ser Leu Phe Pro Gly Leu Lys Asp Ala Gln
 195 200 205
 Val Leu His Cys Tyr Ala Gly Met Arg Ser Ser Ser Lys Ser Arg Leu
 210 215 220
 Pro Val Ile Ser Arg Ile Arg Glu Lys Leu Trp Phe Leu Gly Gly Leu
 225 230 235 240

Gly Ser Lys Gly Leu Leu Tyr His Gly Ile Thr Gly Asp Met Leu Ala
 245 250 255
 Gln Ala Val Leu Arg Lys Ser Thr Ala Tyr Ile Ala Lys Glu Phe Leu
 260 265 270
 Phe Thr Ile
 275
 <210>1105
 <211>485
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1105
 Met Thr Ser Arg Thr Lys Ser Ser Lys Asn Leu Gly Thr Ile Ala Leu
 1 5 10 15
 Ala Gly Met Val Val Ser Ser Ile Ile Gly Gly Gly Ile Phe Ser Leu
 20 25 30
 Pro Gln Asn Met Ala Ala Thr Ala Gly Ala Gly Ala Val Ile Leu Ser
 35 40 45
 Trp Ile Leu Thr Gly Phe Gly Met Phe Phe Ile Ala Asn Thr Phe Arg
 50 55 60
 Ile Leu Ser Thr Ile Arg Pro Asp Leu Lys Glu Gly Ile Tyr Met Tyr
 65 70 75 80
 Ser Arg Glu Gly Phe Gly Pro Tyr Ile Gly Phe Thr Ile Gly Trp Gly
 85 90 95
 Tyr Trp Leu Cys Gln Ile Phe Gly Asn Val Gly Tyr Ala Val Ile Thr
 100 105 110
 Met Asp Ala Leu Asn Tyr Phe Phe Pro Pro Tyr Phe Gln Gly Gly Asn
 115 120 125
 Thr Leu Pro Ala Ile Leu Gly Gly Ser Ile Leu Ile Trp Val Phe Asn
 130 135 140
 Phe Ile Val Leu Lys Gly Ile Arg Gln Ala Ser Ile Ile Asn Val Ile
 145 150 155 160
 Gly Thr Ile Phe Lys Ile Ile Pro Leu Ile Ile Phe Ile Ile Leu Thr
 165 170 175
 Ala Phe Phe Phe Lys Leu Ala Val Phe Lys Thr Asp Phe Trp Gly His
 180 185 190
 Ala Val Thr Lys Ala Gln Pro Ser Leu Gly Ser Val Ser Ser Gln Leu
 195 200 205
 Lys Gly Thr Met Leu Val Thr Leu Trp Ala Phe Ile Gly Ile Glu Gly
 210 215 220
 Ala Val Val Met Ser Gly Arg Ala Lys Asn Pro Leu Ser Val Gly Gln
 225 230 235 240
 Ala Thr Val Leu Gly Phe Leu Gly Cys Leu Thr Ile Tyr Ile Leu Phe
 245 250 255
 Ser Leu Leu Pro Phe Gly Ser Leu Phe Gln His Gln Leu Ala Asn Ile
 260 265 270
 Pro Asn Pro Ser Thr Ala Gly Val Leu Asp Ile Leu Val Gly Lys Trp
 275 280 285
 Gly Glu Val Leu Met Asn Val Gly Leu Ile Ile Ala Val Leu Ser Ser
 290 295 300
 Trp Leu Ser Trp Thr Ile Val Ala Glu Ile Pro Phe Ser Ala Ala
 305 310 315 320
 Lys Asn Gly Thr Phe Pro Glu Ile Phe Thr Ile Glu Asn Lys Glu Lys
 325 330 335
 Ser Pro Ser Val Ser Leu Tyr Ile Thr Ser Ser Val Met Gln Leu Ala
 340 345 350
 Met Leu Leu Val Tyr Phe Ser Ser Asn Ala Trp Asn Thr Met Leu Ser
 355 360 365
 Ile Thr Gly Val Met Val Leu Pro Ala Tyr Leu Ala Ser Ala Ala Phe
 370 375 380
 Leu Phe Lys Leu Ser Lys Ser Lys Thr Tyr Pro Lys Lys Gly Ser Ile
 385 390 395 400
 Lys Ala Pro Leu Ala Met Ile Thr Gly Ile Leu Gly Val Val Tyr Ser
 405 410 415
 Leu Trp Leu Ile Tyr Ala Gly Gly Leu Lys Tyr Leu Phe Met Ala Leu

420 425 430
 Val Leu Leu Ala Leu Gly Ile Pro Phe Tyr Ile Asp Ala Gly Lys Lys
 435 440 445
 Lys Lys Asn Ala Lys Thr Phe Phe Ala Lys Lys Glu Ile Val Gly Met
 450 455 460
 Thr Phe Ile Gly Leu Leu Ala Leu Thr Ala Ile Phe Leu Phe Ser Thr
 465 470 475 480
 Gly Arg Ile Lys Ile
 485

<210>1106

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1106

Leu Met Ala Tyr Gly Thr Arg Tyr Pro Thr Leu Ala Phe His Thr Gly
 1 5 10 15
 Gly Ile Gly Glu Ser Asp Asp Gly Met Pro Pro Gln Pro Phe Glu Thr
 20 25 30
 Phe Cys Tyr Asp Ser Ala Leu Leu Gln Ala Lys Ile Glu Asn Phe Asn
 35 40 45
 Ile Val Pro Tyr Thr Ser Val Leu Pro Lys Glu Leu Phe Gly Asn Ile
 50 55 60
 Val Pro Val Asp Thr Cys Val Lys Ser Phe Lys His Gly Ala Val Leu
 65 70 75 80
 Glu Val Ile Met Ala Gly Arg Gly Ala Ala Leu Ser Asp Gly Thr His
 85 90 95
 Ala Ile Ala Thr Gly Ile Gly Ile Cys Trp Gly Lys Asp Lys Asn Gly
 100 105 110
 Glu Leu Ile Gly Gly Trp Ala Ala Glu Tyr Val Glu Phe Phe Pro Thr
 115 120 125
 Trp Ile Asn Asp Glu Ile Ala Glu Thr His Ala Lys Met Trp Leu Lys
 130 135 140
 Lys Ser Leu Gln His Glu Leu Asp Leu Arg Ser Ile Ala Lys His Ser
 145 150 155 160
 Glu Phe Gln Phe Phe His Asn Tyr Ile Asn Ile Lys Gln Lys Phe Gly
 165 170 175
 Phe Cys Leu Thr Ala Leu Gly Phe Leu Asn Phe Glu Asn Ala Glu Pro
 180 185 190
 Ala Lys Val Asn
 195

<210>1107

<211>165

<212>PRT

<213>Chlamydia pneumoniae

<400>1107

Gln Lys Ala Thr Tyr Asn Phe Tyr Gly Tyr Ala Ser Trp Thr Pro Lys
 1 5 10 15
 Pro Ser Cys Gly Asp Gly Gln Tyr Ser Val Leu Leu Tyr Ser Thr Arg
 20 25 30
 Lys Val Pro Glu Gln Asn Ser Gln Val Thr Gly Trp Ser Leu Asn Ala
 35 40 45
 Ala Gln His Ile His Glu Lys Leu Tyr Leu Phe Gly Arg Ile Asn Gly
 50 55 60
 Ala Thr Gly Thr Ala Leu Pro Ile Asn Arg Ser Tyr Val Leu Gly Leu
 65 70 75 80
 Val Ser Glu Asn Pro Leu Asn Arg His Ser Gln Asp Leu Leu Gly Ile
 85 90 95
 Gly Phe Ala Thr Asn Lys Val Asn Ala Lys Ala Ile Ser Asn Val Asn
 100 105 110
 Lys Leu Arg Arg Tyr Glu Ser Val Met Glu Ala Phe Ala Thr Ile Gly
 115 120 125
 Phe Gly Pro Tyr Ile Ser Leu Thr Pro Asp Phe Gln Leu Tyr Ile His
 130 135 140
 Pro Ala Leu Arg Pro Glu Arg Arg Thr Ser Gln Val Tyr Gly Leu Arg

145

150

155

160

Ala Asn Leu Ser Leu

165

<210>1108

<211>354

<212>PRT

<213>Chlamydia pneumoniae

<400>1108

Asn Asn Lys Lys Lys Asp Tyr Ser Gly Glu Phe Leu Thr Thr Asp Thr
 1 5 10 15
 Val Asp Ser Ile Ala Phe Leu Ser Ser Glu Glu Asn Phe Cys Tyr Ile
 20 25 30
 Lys Thr Ile Leu Phe Phe Arg Val Lys Lys Lys His Tyr Ala Phe Phe
 35 40 45
 Tyr Gly Glu Phe Met Ile Xaa Phe Arg Phe Leu Leu Leu Ser Gly Leu
 50 55 60
 Cys Ala Leu Gly Ile Ser Ser Tyr Ala Glu Thr Pro Lys Glu Thr Thr
 65 70 75 80
 Gly His Tyr His Arg Tyr Lys Ala Arg Ile Gln Lys Lys His Pro Glu
 85 90 95
 Ser Ile Lys Glu Ser Ala Pro Ser Glu Thr Pro His His Asn Ser Leu
 100 105 110
 Leu Ser Pro Val Thr Asn Ile Phe Cys Ser His Pro Trp Lys Asp Gly
 115 120 125
 Ile Ser Val Ser Asn Leu Leu Thr Ser Val Glu Lys Ala Thr Asn Thr
 130 135 140
 Gln Ile Ser Leu Asp Phe Ser Ile Leu Pro Gln Trp Phe Tyr Pro His
 145 150 155 160
 Lys Ala Leu Gly Gln Thr Gln Ala Leu Glu Ile Pro Ser Trp Gln Phe
 165 170 175
 Tyr Phe Ser Pro Ser Thr Thr Trp Thr Leu Tyr Asp Ser Pro Thr Ala
 180 185 190
 Gly Gln Gly Ile Val Asp Phe Ser Tyr Thr Leu Ile His Tyr Trp Gln
 195 200 205
 Thr Asn Gly Val Asp Ala Asn Gln Ala Ala Gly Thr Ala Ser Ser Met
 210 215 220
 Asn Asp Tyr Ser Asn Arg Glu Asn Asn Leu Ala Gln Leu Thr Phe Ser
 225 230 235 240
 Gln Thr Phe Pro Gly Asp Phe Leu Thr Leu Ala Ile Gly Gln Tyr Ser
 245 250 255
 Leu Tyr Ala Ile Asp Gly Thr Leu Tyr Asp Asn Asp Gln Tyr Ser Gly
 260 265 270
 Phe Ile Ser Tyr Ala Leu Ser Gln Asn Ala Ser Ala Thr Tyr Ser Leu
 275 280 285
 Gly Ser Thr Gly Ala Tyr Leu Gln Phe Thr Pro Asn Ser Glu Ile Lys
 290 295 300
 Val Gln Leu Gly Phe Gln Asp Ser Tyr Asn Ile Asp Gly Thr Asn Phe
 305 310 315 320
 Ser Ile Tyr Asn Leu Thr Lys Ser Asn Ile Gln Leu Leu Arg Leu Arg
 325 330 335
 Leu Leu Asp Ser Lys Thr Phe Val Trp Arg Trp Thr Val Leu Cys Ile
 340 345 350
 Ala Leu

<210>1109

<211>286

<212>PRT

<213>Chlamydia pneumoniae

<400>1109

Lys Thr Ser Trp Gln Lys Tyr Lys Lys Tyr Leu Ser Tyr Ser Ile Leu
 1 5 10 15
 Val Gln Lys Ile Ala Arg Tyr Val Met Lys Thr Trp Leu Phe Phe Thr
 20 25 30
 Phe Leu Phe Ser Cys Ser Ser Phe Tyr Ala Ser Cys Arg Tyr Ala Glu

35 40 45
 Val Arg Ser Ile His Glu Val Ala Gly Asp Ile Leu Tyr Asp Glu Glu
 50 55 60
 Asn Phe Trp Leu Ile Leu Asp Leu Asp Asp Thr Leu Leu Gln Gly Gly
 65 70 75 80
 Glu Ala Leu Ser His Ser Ile Trp Lys Ser Lys Ala Ile Gln Gly Leu
 85 90 95
 Gln Lys Gln Gly Thr Pro Glu Gln Glu Ala Trp Glu Ala Val Val Pro
 100 105 110
 Phe Trp Ile Glu Ile Gln Glu Met Gly Thr Val Gln Pro Ile Glu Ser
 115 120 125
 Ala Ile Phe Leu Leu Ile Glu Lys Ile Gln Lys Gln Gly Lys Thr Thr
 130 135 140
 Phe Val Tyr Thr Glu Arg Pro Lys Thr Ala Lys Asp Leu Thr Leu Lys
 145 150 155 160
 Gln Leu His Met Leu Asn Val Ser Leu Glu Asp Thr Ala Pro Gln Pro
 165 170 175
 Gln Ala Pro Leu Pro Lys Asn Leu Leu Tyr Thr Ser Gly Ile Leu Phe
 180 185 190
 Ser Gly Asp Tyr His Lys Gly Pro Gly Leu Asp Leu Phe Leu Glu Ile
 195 200 205
 Cys Thr Pro Leu Pro Ala Lys Ile Ile Tyr Ile Asp Asn Gln Lys Glu
 210 215 220
 Asn Val Leu Arg Ile Gly Asp Leu Cys Gln Lys Tyr Gly Ile Ala Tyr
 225 230 235 240
 Phe Gly Ile Thr Tyr Lys Ala Gln Glu Leu His Pro Pro Ile Tyr Phe
 245 250 255
 Asp Asn Ile Ala Gln Val Gln Tyr Asn Tyr Ser Lys Lys Leu Leu Ser
 260 265 270
 Asn Glu Ala Ala Ala Leu Leu Leu Arg His Gln Met His Glu
 275 280 285

<210>1110

<211>504

<212>PRT

<213>Chlamydia pneumoniae

<400>1110

Val Val Gln Leu Pro Leu Met Val Pro Ile Val His Leu Gln Ile Trp
 1 5 10 15
 Arg Phe Ser Met Ile Tyr Tyr Gly Val Ser Val Met Leu Cys Ala Thr
 20 25 30
 Val Ser Gly Pro Ser Phe Cys Glu Ala Lys Gln Gln Ile Leu Lys Ser
 35 40 45
 Leu His Leu Val Asp Ile Ile Glu Leu Arg Leu Asp Leu Ile Asn Glu
 50 55 60
 Leu Asp Asp Gln Glu Leu His Thr Leu Ile Thr Thr Ala Gln Asn Pro
 65 70 75 80
 Ile Leu Thr Phe Arg Gln His Lys Glu Met Ser Thr Ala Leu Trp Ile
 85 90 95
 Gln Lys Leu Tyr Ser Leu Ala Lys Leu Glu Pro Lys Trp Met Asp Ile
 100 105 110
 Asp Val Ser Leu Pro Lys Thr Ala Leu Gln Thr Ile Arg Lys Ser His
 115 120 125
 Pro Lys Ile Lys Leu Ile Leu Ser Tyr His Thr Asp Lys Asn Glu Asp
 130 135 140
 Leu Asp Ala Ile Tyr Asn Glu Met Leu Ala Thr Pro Ala Glu Ile Tyr
 145 150 155 160
 Lys Ile Val Leu Ser Pro Glu Asn Ser Ser Glu Ala Leu Asn Tyr Ile
 165 170 175
 Lys Lys Ala Arg Leu Leu Pro Lys Pro Ser Thr Val Leu Cys Met Gly
 180 185 190
 Thr His Gly Leu Pro Ser Arg Val Leu Ser Pro Leu Ile Ser Asn Ala
 195 200 205
 Met Asn Tyr Ala Ala Gly Ile Ser Ala Pro Gln Val Ala Pro Gly Gln
 210 215 220

Pro Lys Leu Glu Glu Leu Leu Ser Tyr Asn Tyr Ser Lys Leu Ser Glu
 225 230 235 240
 Lys Ser His Ile Tyr Gly Leu Ile Gly Asp Pro Val Asp Arg Ser Ile
 245 250 255
 Ser His Leu Ser His Asn Phe Leu Leu Ser Lys Leu Ser Leu Asn Ala
 260 265 270
 Thr Tyr Ile Lys Phe Pro Val Thr Ile Gly Glu Val Val Thr Phe Phe
 275 280 285
 Ser Ala Ile Arg Asp Leu Pro Phe Ser Gly Leu Ser Val Thr Met Pro
 290 295 300
 Leu Lys Thr Ala Ile Phe Asp His Val Asp Ala Leu Asp Ala Ser Ala
 305 310 315 320
 Gln Leu Cys Glu Ser Ile Asn Thr Leu Val Phe Arg Asn Gln Lys Ile
 325 330 335
 Leu Gly Tyr Asn Thr Asp Gly Glu Gly Val Ala Lys Leu Leu Lys Gln
 340 345 350
 Lys Asn Ile Ser Val Asn Asn Lys His Ile Ala Ile Val Gly Ala Gly
 355 360 365
 Gly Ala Ala Lys Ala Ile Ala Ala Thr Leu Ala Met Gln Gly Ala Asn
 370 375 380
 Leu His Ile Phe Asn Arg Thr Leu Ser Ser Ala Ala Ala Leu Ala Thr
 385 390 395 400
 Cys Cys Lys Gly Lys Ala Tyr Pro Leu Gly Ser Leu Glu Asn Phe Lys
 405 410 415
 Thr Ile Asp Ile Ile Ile Asn Cys Leu Pro Pro Glu Val Thr Phe Pro
 420 425 430
 Trp Arg Phe Pro Pro Ile Val Met Asp Ile Asn Thr Lys Pro His Pro
 435 440 445
 Ser Pro Tyr Leu Glu Arg Ala Gln Lys His Gly Ser Leu Ile Ile His
 450 455 460
 Gly Tyr Glu Met Phe Ile Glu Gln Ala Leu Leu Gln Phe Ala Leu Trp
 465 470 475 480
 Phe Pro Asp Phe Leu Thr Pro Glu Ser Cys Asp Ser Phe Arg Asn Tyr
 485 490 495
 Val Lys Asn Phe Met Ala Lys Val
 500

<210>1111

<211>384

<212>PRT

<213>Chlamydia pneumoniae

<400>1111

Met Leu Gln Thr Ile Met Ser Glu Thr Ile Ile Thr Thr Pro His Val
 1 5 10 15
 Val Lys Leu Ile Ser Asn Phe Phe Gln Lys Lys Leu Phe Ser Ser Ile
 20 25 30
 Ser Thr Ala Tyr Pro Leu Val Ile Ile Thr Asp Val Ser Val Gln Gln
 35 40 45
 His Leu Leu Gly Pro Ile Leu Asp His Ile Lys Met Leu Gly Tyr Gln
 50 55 60
 Val Ile Val Leu Thr Phe Pro Pro Gly Glu Pro Asn Lys Thr Trp Glu
 65 70 75 80
 Thr Phe Ile Ser Leu Gln Tyr Gln Leu Val Asp Gln Asn Ile Ser Pro
 85 90 95
 Lys Ser Ser Ile Ile Gly Ile Gly Gly Gly Thr Val Leu Asp Met Thr
 100 105 110
 Gly Phe Leu Ala Ala Thr Tyr Cys Arg Gly Leu Pro Leu Tyr Leu Ile
 115 120 125
 Pro Thr Thr Ile Thr Ala Met Val Asp Thr Ser Ile Gly Gly Lys Asn
 130 135 140
 Gly Ile Asn Leu Arg Gly Ile Lys Asn Arg Leu Gly Thr Phe Tyr Leu
 145 150 155 160
 Pro Lys Glu Val Trp Met Cys Pro Gln Phe Leu Ser Thr Leu Pro Arg
 165 170 175
 Glu Glu Trp Tyr His Gly Ile Ala Glu Ala Ile Lys His Gly Phe Ile

1114

Thr Asp Pro Phe Val Met Glu Gly Glu Asn Ile Thr Leu Lys Ser Asn
 275 280 285
 Asn Cys Gly Gly Thr Leu Gly Gly Ile Thr Ile Gly Val Pro Ile Glu
 290 295 300
 Gly Arg Ile Ala Phe Lys Pro Thr Ser Ser Ile Lys Arg Pro Cys Ala
 305 310 315 320
 Thr Val Thr Lys Thr Lys Lys Glu Thr Thr Tyr Arg Thr Pro Gln Thr
 325 330 335
 Gly Arg His Asp Pro Cys Val Ala Ile Arg Ala Val Pro Val Val Glu
 340 345 350
 Ala Met Ile Asn Leu Val Leu Ala Asp Leu Val Leu Tyr Gln Arg Cys
 355 360 365
 Ser Lys Leu Ser Cys Gln Arg Gln
 370 375

<210>1113

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>1113

Trp Lys Leu Glu Leu Arg Asn Val Met Thr Ile Ile Leu Cys Gly Leu
 1 5 10 15
 Pro Thr Ser Gly Lys Ser Ser Leu Gly Lys Ala Leu Ala Lys Phe Leu
 20 25 30
 Asn Leu Pro Phe Tyr Asp Leu Asp Asp Leu Ile Val Ser Asn Tyr Ser
 35 40 45
 Ser Ala Leu Tyr Ser Ser Ser Ala Glu Ile Tyr Lys Ala Tyr Gly Asp
 50 55 60
 Gln Lys Phe Ser Glu Cys Glu Ala Arg Ile Leu Glu Thr Leu Pro Pro
 65 70 75 80
 Glu Asp Ala Leu Ile Ser Leu Gly Gly Gly Thr Leu Met Tyr Glu Ala
 85 90 95
 Ser Tyr Arg Ala Ile Gln Thr Arg Gly Ala Leu Val Phe Leu Ser Val
 100 105 110
 Glu Leu Pro Leu Ile Tyr Glu Arg Leu Glu Lys Arg Gly Leu Pro Glu
 115 120 125
 Arg Leu Lys Glu Ala Met Lys Thr Lys Pro Leu Ser Glu Ile Leu Thr
 130 135 140
 Glu Arg Ile Asp Arg Met Lys Glu Ile Ala Asp Tyr Ile Phe Pro Val
 145 150 155 160
 Asp His Val Asp His Ser Ser Lys Ser Ser Leu Glu Gln Ala Ser Gln
 165 170 175
 Asp Leu Ile Thr Leu Leu Lys Ser
 180

<210>1114

<211>449

<212>PRT

<213>Chlamydia pneumoniae

<400>1114

Val Cys Phe Thr Met Leu Thr Tyr Lys Val Ser Pro Ser Ser Val Tyr
 1 5 10 15
 Gly Asn Ala Phe Ile Pro Ser Ser Lys Ser His Thr Leu Arg Ala Ile
 20 25 30
 Leu Trp Ala Ser Val Ala Glu Gly Lys Ser Thr Ile Tyr Asn Tyr Leu
 35 40 45
 Asp Ser Pro Asp Thr Glu Ala Met Ile Cys Ala Cys Lys Gln Met Gly
 50 55 60
 Ala Ser Ile Lys Lys Phe Pro Gln Ile Leu Glu Ile Val Gly Asn Pro
 65 70 75 80
 Leu Ala Ile Phe Pro Lys Tyr Thr Leu Ile Asp Ala Gly Asn Ser Gly
 85 90 95
 Ile Val Leu Arg Phe Met Thr Ala Leu Ala Cys Val Phe Ser Lys Glu
 100 105 110
 Ile Thr Val Thr Gly Ser Ser Gln Leu Gln Arg Arg Pro Met Ala Pro
 115 120 125

Leu Leu Gln Ala Leu Arg Asn Phe Gly Ala Ser Phe His Phe Ser Ser
 130 135 140
 Asp Lys Ser Val Leu Pro Phe Thr Met Ser Gly Pro Leu Arg Ser Ala
 145 150 155 160
 Tyr Ser Asp Val Glu Gly Ser Asp Ser Gln Phe Ala Ser Ala Leu Ala
 165 170 175
 Val Ala Cys Ser Leu Ala Glu Gly Pro Cys Ser Phe Thr Ile Ile Glu
 180 185 190
 Pro Lys Glu Arg Pro Trp Phe Asp Leu Ser Leu Trp Trp Leu Glu Lys
 195 200 205
 Leu His Leu Pro Tyr Ser Cys Ser Asp Thr Thr Tyr Ser Phe Pro Gly
 210 215 220
 Ser Ser His Pro Gln Gly Phe Ser Tyr His Val Thr Gly Asp Phe Ser
 225 230 235 240
 Ser Ala Ala Phe Ile Ala Ala Ala Ala Leu Leu Ser Lys Ser Leu Gln
 245 250 255
 Pro Ile Arg Leu Arg Asn Leu Asp Ile Leu Asp Ile Gln Gly Asp Lys
 260 265 270
 Ile Phe Phe Ser Leu Met Gln Asn Leu Gly Ala Ser Ile Gln Tyr Asp
 275 280 285
 Asn Glu Glu Ile Leu Val Phe Pro Ser Ser Phe Ser Gly Gly Ser Ile
 290 295 300
 Asp Met Asp Gly Cys Ile Asp Ala Leu Pro Ile Leu Thr Val Leu Cys
 305 310 315 320
 Cys Phe Ala Asp Ser Pro Ser His Leu Tyr Asn Ala Arg Ser Ser Lys
 325 330 335
 Asp Lys Glu Ser Asp Arg Ile Leu Ala Ile Thr Glu Glu Leu Gln Lys
 340 345 350
 Met Gly Ala Cys Ile Gln Pro Thr His Asp Gly Leu Leu Val Asn Pro
 355 360 365
 Ser Pro Leu Tyr Gly Ala Val Leu Asp Ser His Asp Asp His Arg Ile
 370 375 380
 Ala Met Ala Leu Thr Ile Ala Ala Leu Tyr Ala Ser Gly Asp Ser Arg
 385 390 395 400
 Ile His Asn Thr Ala Cys Val Arg Lys Thr Phe Pro Asn Phe Val Gln
 405 410 415
 Thr Leu Asn Ile Met Glu Ala Arg Ile Glu Glu Cys His Asp Asn Tyr
 420 425 430
 Ser Met Trp Ser Thr His Lys Arg Lys Val Phe Ala Arg Glu Ser Phe
 435 440 445
 Gly

<210>1115

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1115

Arg Cys Glu Gly Glu Ser Ala Lys Gln Gln Arg Thr Val Arg Met Gly
 1 5 10 15
 Arg Ala Ser Ile Gln Pro Ser Ile Ser Ile Glu Pro Pro Glu Asn Asp
 20 25 30
 Glu Gly Asn Thr Lys Ile Ser Ser Leu Ser Tyr Cys Ile Glu Ala Pro
 35 40 45
 Lys Phe Cys Met Arg Glu Lys Lys Ile Leu Ser Pro Trp Ile Ser Lys
 50 55 60
 Met Ser Lys Leu Arg Arg Arg Ile Gly Trp Ser Asp Phe Glu Ser Arg
 65 70 75 80
 Ala Ala Ala Ala Met Lys Ala Ala Leu Leu Lys Ser Pro Val Thr Trp
 85 90 95

<210>1116

<211>283

<212>PRT

<213>Chlamydia pneumoniae

<400>1116

Arg Pro Ser Gln Ser Leu Phe Leu Arg Thr Trp Ser Pro Ser Ser
 1 5 10 15
 Phe Arg Glu His Thr Val Cys Ala Ala Pro Leu Leu Tyr Pro Arg Arg
 20 25 30
 Arg Ser Pro Asp Tyr Leu Phe Ser Pro Thr Gly Cys Pro Met Ser Thr
 35 40 45
 Thr Thr Val Lys His Phe Ile His Thr Ala Ser Arg Trp Glu Pro Val
 50 55 60
 Leu Lys Glu Ile Val Ala Ser Asn Tyr Trp His Ala Gln Trp Ile Asn
 65 70 75 80
 Thr Leu Ser Phe Leu Glu Asn Ser Gly Ala Lys Lys Ile Ser Ala Ser
 85 90 95
 Glu His Pro Thr Glu Val Lys Glu Glu Val Leu Lys His Ala Ala Glu
 100 105 110
 Glu Phe Arg His Gly His Tyr Leu Lys Thr Gln Ile Ser Arg Ile Ser
 115 120 125
 Glu Thr Ser Leu Pro Asp Tyr Thr Ser Lys Asn Leu Leu Gly Gly Leu
 130 135 140
 Leu Thr Lys Tyr Tyr Leu His Leu Leu Asp Leu Arg Thr Cys Arg Val
 145 150 155 160
 Leu Glu Asn Glu Tyr Ser Leu Ser Gly Gln Thr Leu Lys Thr Ala Ala
 165 170 175
 Tyr Ile Leu Val Thr Tyr Ala Ile Glu Leu Arg Ala Ser Glu Leu Tyr
 180 185 190
 Pro Leu Tyr His Asp Ile Leu Lys Glu Ala Gln Ser Lys Ile Thr Val
 195 200 205
 Lys Ser Ile Ile Leu Glu Glu Gln Gly His Leu Gln Glu Met Glu Arg
 210 215 220
 Glu Leu Lys Asp Leu Pro His Gly Glu Gly Thr Leu Arg Leu Cys Leu
 225 230 235 240
 Pro Ile Arg Arg Gly Ala Leu Leu Ala Val Cys Arg Glu Ile Arg Thr
 245 250 255
 Asn Asp Leu Arg Ser Phe Leu Asp Phe Tyr Lys Val Leu Glu Phe Phe
 260 265 270
 Leu Asp Asp Lys Ser Glu Val Arg Gln Ile Thr
 275 280

<210>1117

<211>505

<212>PRT

<213>Chlamydia pneumoniae

<400>1117

Leu Val Met Phe Leu Asp Phe Ser Glu Pro Ser Ile Ser Arg Lys Tyr
 1 5 10 15
 Gln Ser His Leu Phe Asn Gly Arg Ser Asn Ala Leu Thr Lys Pro Gln
 20 25 30
 Tyr Leu Arg Tyr Gly Gly Lys Trp Val Ser Arg Gly Arg Arg Ala Leu
 35 40 45
 Ala Asn Ser Arg Asn Gln Ala Ser Tyr Asn Arg Asp Ser Cys Gln Gly
 50 55 60
 Lys Arg Asn His Lys Asp Asn His Lys Leu Leu Cys Arg Thr Met Glu
 65 70 75 80
 Gly Ser Met Asp Lys Gln Ser Ser Gly Asn Ser Gly Cys Ile Trp His
 85 90 95
 Pro Phe Thr Gln Ser Ala Leu Asp Ser Thr Pro Ile Lys Ile Val Arg
 100 105 110
 Gly Glu Gly Ala Tyr Leu Tyr Ala Glu Ser Gly Thr Arg Tyr Leu Asp
 115 120 125
 Ala Ile Ser Ser Trp Trp Cys Asn Leu His Gly His Gly His Pro Tyr
 130 135 140
 Ile Thr Lys Lys Leu Cys Glu Gln Ala Gln Lys Leu Glu His Val Ile
 145 150 155 160
 Phe Ala Asn Phe Thr His Glu Pro Ala Leu Glu Leu Val Ser Lys Leu
 165 170 175
 Ala Pro Leu Leu Pro Glu Gly Leu Glu Arg Phe Phe Phe Ser Asp Asn

180 185 190
 Gly Ser Thr Ser Ile Glu Ile Ala Met Lys Ile Ala Val Gln Tyr Tyr
 195 200 205
 Tyr Asn Gln Asn Lys Ala Lys Ser His Phe Val Gly Leu Ser Asn Ala
 210 215 220
 Tyr His Gly Asp Thr Phe Gly Ala Met Ser Ile Ala Gly Thr Ser Pro
 225 230 235 240
 Thr Thr Val Pro Phe His Asp Leu Phe Leu Pro Ser Ser Thr Ile Ala
 245 250 255
 Ala Pro Tyr Tyr Gly Lys Glu Glu Leu Ala Ile Ala Gln Ala Lys Thr
 260 265 270
 Val Phe Ser Glu Ser Asn Ile Ala Ala Phe Ile Tyr Glu Pro Leu Leu
 275 280 285
 Gln Gly Ala Gly Gly Met Leu Met Tyr Asn Pro Glu Gly Leu Lys Glu
 290 295 300
 Ile Leu Lys Leu Ala Lys His Tyr Gly Val Leu Cys Ile Ala Asp Glu
 305 310 315 320
 Ile Leu Thr Gly Phe Gly Arg Thr Gly Pro Leu Phe Ala Ser Glu Phe
 325 330 335
 Thr Asp Ile Pro Pro Asp Ile Ile Cys Leu Ser Lys Gly Leu Thr Gly
 340 345 350
 Gly Tyr Leu Pro Leu Ala Leu Thr Val Thr Thr Lys Glu Ile His Asp
 355 360 365
 Ala Phe Val Ser Gln Asp Arg Met Lys Ala Leu Leu His Gly His Thr
 370 375 380
 Phe Thr Gly Asn Pro Leu Gly Cys Ser Ala Ala Leu Ala Ser Leu Asp
 385 390 395 400
 Leu Thr Leu Ser Pro Glu Cys Leu Gln Gln Arg Gln Met Ile Glu Arg
 405 410 415
 Cys His Gln Glu Phe Gln Glu Ala His Gly Ser Leu Trp Gln Arg Cys
 420 425 430
 Glu Val Leu Gly Thr Val Leu Ala Leu Asp Tyr Pro Ala Glu Ala Thr
 435 440 445
 Gly Tyr Phe Ser Gln Tyr Arg Asp His Leu Asn Arg Phe Phe Leu Glu
 450 455 460
 Arg Gly Val Leu Leu Arg Pro Leu Gly Asn Thr Leu Tyr Val Leu Pro
 465 470 475 480
 Pro Tyr Cys Ile Gln Glu Glu Asp Leu Arg Ile Ile Tyr Ser His Leu
 485 490 495
 Gln Asp Ala Leu Cys Leu Gln Pro Gln
 500 505

<210>1118

<211>219

<212>PRT

<213>Chlamydia pneumoniae

<400>1118

Met Gln Arg Ile Ile Ile Val Gly Ile Asp Thr Gly Val Gly Lys Thr
 1 5 10 15
 Ile Val Ser Ala Ile Leu Ala Arg Ala Leu Asn Ala Glu Tyr Trp Lys
 20 25 30
 Pro Ile Gln Ala Gly Asn Leu Glu Asn Ser Asp Ser Asn Ile Val His
 35 40 45
 Glu Leu Ser Gly Ala Tyr Cys His Pro Glu Ala Tyr Arg Leu His Lys
 50 55 60
 Pro Leu Ser Pro His Lys Ala Ala Gln Ile Asp Asn Val Ser Ile Glu
 65 70 75 80
 Glu Ser His Ile Cys Ala Pro Lys Thr Thr Ser Asn Leu Ile Ile Glu
 85 90 95
 Thr Ser Gly Gly Phe Leu Ser Pro Cys Thr Ser Lys Arg Leu Gln Gly
 100 105 110
 Asp Val Phe Ser Ser Trp Ser Cys Ser Trp Ile Leu Val Ser Gln Ala
 115 120 125
 Tyr Leu Gly Ser Ile Asn His Thr Cys Leu Thr Val Glu Ala Met Arg
 130 135 140

Ser Arg Asn Leu Asn Ile Leu Gly Met Val Val Asn Gly Tyr Pro Glu
 145 150 155 160
 Asp Glu Glu His Trp Leu Thr Gln Glu Ile Lys Leu Pro Ile Ile Gly
 165 170 175
 Thr Leu Ala Lys Glu Lys Glu Ile Thr Lys Thr Ile Ile Ser Cys Tyr
 180 185 190
 Ala Glu Gln Trp Lys Glu Val Trp Thr Ser Asn His Gln Gly Ile Gln
 195 200 205
 Gly Val Ser Gly Thr Pro Ser Leu Asn Leu His
 210 215
 <210>1119
 <211>383
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1119
 Pro Met Leu Cys Gln Gln Phe Leu Ile Glu Ala Leu Ala Arg Arg Lys
 1 5 10 15
 Ser Lys His Thr Tyr Arg Ser Leu Ser Leu Asn Ser His Leu Ile Asp
 20 25 30
 Phe Thr Ser Asn Asp Tyr Leu Gly Phe Ala Ser Ser Pro Glu Leu Arg
 35 40 45
 Lys Glu Tyr Ile Thr Lys Leu His Ala Ile Glu Ser Leu Gly Ala Thr
 50 55 60
 Gly Ser Arg Leu Leu Thr Gly His Ser Gln Leu Cys Gln Arg Ile Glu
 65 70 75 80
 Glu Gln Leu Ala Ala Tyr His Asn Phe Glu Ser Cys Leu Ile Phe Asn
 85 90 95
 Thr Gly Tyr Thr Ala Asn Leu Gly Leu Tyr Ala Leu Ala Thr Asp
 100 105 110
 Gln Asp Arg Ile Leu His Asp Leu Tyr Ile His Ala Ser Ile Tyr Asp
 115 120 125
 Gly Ile Arg Leu Ser Lys Ala Gln Ser Phe Pro Phe Asn His Asn Asp
 130 135 140
 Leu Asn His Leu Glu Lys Arg Leu Ala Ser Ser His Leu Gly Arg Thr
 145 150 155 160
 Phe Val Cys Val Glu Ser Val Tyr Ser Leu His Gly Ser Val Ala Pro
 165 170 175
 Leu Gln Ala Ile Ser Glu Leu Cys Glu Arg Tyr Ser Ala Tyr Leu Ile
 180 185 190
 Val Asp Glu Ala His Ala Val Gly Val Phe Gly Asp Gln Gly Glu Gly
 195 200 205
 Leu Val Ser Ala Leu Gly Leu Gln Asp Lys Val Leu Ala Thr Val Tyr
 210 215 220
 Thr Phe Gly Lys Ala Leu Gly Thr His Gly Ala Ala Ile Ala Gly Ser
 225 230 235 240
 Ser Ile Leu Lys Asp Tyr Leu Ile Asn Phe Cys Arg Pro Phe Ile Tyr
 245 250 255
 Thr Thr Ala Gln Pro Pro His Ala Leu Thr Ala Ile Glu Leu Ala Tyr
 260 265 270
 Glu His Asn Gln Arg Ala Phe Asn Gln Arg Glu His Leu Ser Ala Leu
 275 280 285
 Ile His His Phe Arg Glu Lys Ala Gln Asn Leu Gly Leu Gln Leu Met
 290 295 300
 Lys Asp Asn Thr Thr Thr Pro Ile Gln Ser Ile Cys Val Ser Gly Ser
 305 310 315 320
 His Arg Ala Arg Gln Ala Ala Leu Gln Ile Gln Asn Ser Gly Tyr Asp
 325 330 335
 Val Arg Pro Ile Val Ser Pro Thr Val Lys Gln Arg Glu Glu Leu Leu
 340 345 350
 Arg Ile Cys Leu His Ala Phe Asn Thr Lys Asn Glu Ile Asp His Leu
 355 360 365
 Leu His Thr Leu Glu Gln Ile Phe Leu Cys Asn Val Ser Ser Leu
 370 375 380
 <210>1120

<211>334

<212>PRT

<213>Chlamydia pneumoniae

<400>1120

Ala Lys His Met Arg Glu Glu Thr Val Ser Trp Ser Leu Glu Asp Ile
 1 5 10 15
 Arg Glu Ile Tyr His Thr Pro Val Phe Glu Leu Ile His Lys Ala Asn
 20 25 30
 Ala Ile Leu Arg Ser Asn Phe Leu His Ser Glu Leu Gln Thr Cys Tyr
 35 40 45
 Leu Ile Ser Ile Lys Thr Gly Gly Cys Val Glu Asp Cys Ala Tyr Cys
 50 55 60
 Ala Gln Ser Ser Arg Tyr His Thr His Val Thr Pro Glu Pro Met Met
 65 70 75 80
 Lys Ile Val Asp Val Val Glu Arg Ala Lys Arg Ala Val Glu Leu Gly
 85 90 95
 Ala Thr Arg Val Cys Leu Gly Ala Ala Trp Arg Asn Ala Lys Asp Asp
 100 105 110
 Arg Tyr Phe Asp Arg Val Leu Ala Met Val Lys Ser Ile Thr Asp Leu
 115 120 125
 Gly Ala Glu Val Cys Cys Ala Leu Gly Met Leu Ser Glu Glu Gln Ala
 130 135 140
 Lys Lys Leu Tyr Asp Ala Gly Leu Tyr Ala Tyr Asn His Asn Leu Asp
 145 150 155 160
 Ser Ser Pro Glu Phe Tyr Glu Thr Ile Ile Thr Thr Arg Ser Tyr Glu
 165 170 175
 Asp Arg Leu Asn Thr Leu Asp Val Val Asn Lys Ser Gly Ile Ser Thr
 180 185 190
 Cys Cys Gly Gly Ile Val Gly Met Gly Glu Ser Glu Glu Asp Arg Ile
 195 200 205
 Lys Leu Leu His Val Leu Ala Thr Arg Asp His Ile Pro Glu Ser Val
 210 215 220
 Pro Val Asn Leu Leu Trp Pro Ile Asp Gly Thr Pro Leu Gln Asp Gln
 225 230 235 240
 Pro Pro Ile Ser Phe Trp Glu Val Leu Arg Thr Ile Ala Thr Ala Arg
 245 250 255
 Val Val Phe Pro Arg Ser Met Val Arg Leu Ala Ala Gly Arg Ala Phe
 260 265 270
 Leu Thr Val Glu Gln Gln Thr Leu Cys Phe Leu Ala Gly Ala Asn Ser
 275 280 285
 Ile Phe Tyr Gly Asp Lys Leu Leu Thr Val Glu Asn Asn Asp Ile Asp
 290 295 300
 Glu Asp Ala Glu Met Ile Lys Leu Leu Gly Leu Ile Pro Arg Pro Ser
 305 310 315 320
 Phe Gly Ile Glu Arg Gly Asn Pro Cys Tyr Ala Asn Asn Ser
 325 330

<210>1121

<211>259

<212>PRT

<213>Chlamydia pneumoniae

<400>1121

Ser Glu Phe Met Val Ser Thr Pro Phe Leu Thr Val Phe Ser Met Glu
 1 5 10 15
 Lys Leu Leu Ser Lys Ile Phe Leu Asp Tyr Leu Glu Ala Phe Gly Leu
 20 25 30
 Leu Ser Asp Phe Leu Asp His Gln Ala Val Ile Lys Phe Phe Glu Leu
 35 40 45
 Glu Thr His Phe Ser Tyr Tyr Pro Val Ser Gly Phe Val Ala Pro His
 50 55 60
 Gln Tyr Leu Ser Leu Leu Gln Asp Arg Tyr Phe Pro Ile Ala Ser Val
 65 70 75 80
 Met Arg Thr Leu Asp Lys Asp Asn Phe Ser Leu Thr Pro Asp Leu Ile
 85 90 95
 His Asp Leu Leu Gly His Val Pro Trp Leu Leu His Pro Ser Phe Ser

100 105 110
 Glu Phe Phe Ile Asn Met Gly Arg Leu Phe Thr Lys Val Ile Glu Lys
 115 120 125
 Val Gln Ala Leu Pro Ser Lys Lys Gln Arg Ile Gln Thr Leu Gln Ser
 130 135 140
 Asn Leu Ile Ala Ile Val Arg Cys Phe Trp Phe Thr Val Glu Ser Gly
 145 150 155 160
 Leu Ile Glu Asn His Glu Gly Arg Lys Ala Tyr Gly Ala Val Leu Ile
 165 170 175
 Ser Ser Pro Gln Glu Leu Gly His Ala Phe Ile Asp Asn Val Arg Val
 180 185 190
 Leu Pro Leu Glu Leu Asp Gln Ile Ile Arg Leu Pro Phe Asn Thr Ser
 195 200 205
 Thr Pro Gln Glu Thr Leu Phe Ser Ile Arg His Phe Asp Glu Leu Val
 210 215 220
 Glu Leu Thr Ser Lys Leu Glu Trp Met Leu Asp Gln Gly Leu Leu Glu
 225 230 235 240
 Ser Ile Pro Leu Tyr Asn Gln Glu Lys Tyr Leu Ser Gly Phe Glu Val
 245 250 255
 Leu Cys Gln

<210>1122

<211>264

<212>PRT

<213>Chlamydia pneumoniae

<400>1122

Met Gly Ser Ser Met His Val Gly Val Ile Gly Cys Ser Gly Arg Thr
 1 5 10 15
 Gly Lys Val Ile Val Ser Ala Leu Glu Gln Ser Ser Glu Tyr Thr Leu
 20 25 30
 Gly Pro Gly Phe Ser Arg Ser Ser Ala Leu Thr Leu Phe Gln Val Ile
 35 40 45
 Ala His Asn Asp Val Leu Val Asp Phe Ser His Pro Leu Leu Thr Lys
 50 55 60
 Glu Val Val Ala His Leu Ile Ser Pro Lys Pro Leu Ile Ile Gly
 65 70 75 80
 Thr Thr Gly Phe Pro Gly Lys Cys Lys Glu Ala His Asp Ser Leu Glu
 85 90 95
 Glu Leu Thr His Ile Val Pro Val Val Val Cys Pro Asn Ala Ser Leu
 100 105 110
 Gly Ala Tyr Ile His Lys Arg Leu Val Met Leu Leu Ser Gln Leu Cys
 115 120 125
 Asn Pro Gln Phe Asp Ile Arg Ile Arg Glu Thr His His Arg Tyr Lys
 130 135 140
 Lys Asp Ser Leu Ser Gly Thr Ala Gln Asp Leu Leu Asp Thr Ile Gln
 145 150 155 160
 Gln Val Lys Gln Glu Asp Trp Gly Glu Glu Tyr Glu Val Gly Gln Arg
 165 170 175
 Asp Ser Ser Lys Lys Thr Ile Glu Val Gln Ser Ser Arg Val Gly Asp
 180 185 190
 Ile Pro Gly Glu His Glu Val Ala Phe Ile Ser Ser Gly Glu Gln Ile
 195 200 205
 Leu Val Arg His Thr Val Phe Ser Arg Asn Val Phe Gly Arg Gly Ile
 210 215 220
 Leu Ser Ile Leu Asp Trp Leu Lys Thr Leu Asn Pro Gln Pro Gly Leu
 225 230 235 240
 Tyr Ser Leu Gly Asp Thr Leu Glu Leu Val Leu Arg Asn Glu His Cys
 245 250 255
 Leu Leu Lys Lys Thr Thr Asp His
 260

<210>1123

<211>295

<212>PRT

<213>Chlamydia pneumoniae

<400>1123

```

Ile Trp Ala Ile Val Trp Arg Cys Leu Tyr Leu Ala Gly Ala Ile Gly
 1           5           10           15
Pro Met Pro Glu Met Val Arg Asp Leu Pro Ile Arg Lys Ile Glu Glu
          20           25           30
Val Gln Ser Asp Ile Val Val Ser Phe Leu Pro Ser Ser Ala Glu Ser
          35           40           45
Met Glu Ala Tyr Cys Leu Ser Gln Gly Lys Val Val Phe Ser Asn Ala
          50           55           60
Ser Thr Tyr Arg Met His Ser Ser Val Pro Ile Ile Pro Glu Val
          65           70           75           80
Asn Ser Asp His Phe Gln Leu Leu Glu Glu Gln Pro Tyr Pro Gly Lys
          85           90           95
Ile Ile Thr Ser Pro Asn Cys Cys Val Ser Gly Ile Thr Leu Ala Leu
          100          105          110
Ala Pro Leu Arg Lys Phe Ser Leu Asp His Val His Ile Val Thr Leu
          115          120          125
Gln Ser Ala Ser Gly Ala Gly Tyr Pro Gly Val Pro Ser Leu Asp Leu
          130          135          140
Leu Ala Asn Thr Val Pro His Ile Val Gly Glu Glu Lys Ile Leu
          145          150          155          160
Arg Glu Thr Val Lys Ile Leu Gly Ser Ser Lys Gln Pro Leu Pro Cys
          165          170          175
Lys Leu Ser Val Thr Val His Arg Val Pro Val Ala Tyr Gly His Thr
          180          185          190
Leu Ser Leu His Val Thr Phe Ser Lys Asp Val Asp Leu Asp Glu Ile
          195          200          205
Leu Tyr Ser Tyr Gln Glu Lys Asn Lys Glu Phe Pro Asn Thr Tyr Gln
          210          215          220
Leu Tyr Asp Asn Pro Trp Ser Pro Gln Ala Arg Lys His Leu Ser His
          225          230          235          240
Asp Asp Met Arg Val His Leu Gly Pro Ile Thr Tyr Gly Gly Asp Phe
          245          250          255
Arg Thr Ile Lys Met Asn Val Leu Ile His Asn Leu Val Arg Gly Ala
          260          265          270
Ala Gly Thr Leu Leu Ala Ser Met Glu Asn Tyr Phe Phe Asp Tyr Leu
          275          280          285
Lys Arg Glu Met Cys Leu Arg
          290          295

```

<210>1124

<211>441

<212>PRT

<213>Chlamydia pneumoniae

<400>1124

```

Asn Val Ser Lys Ile Val Tyr Lys Phe Gly Gly Thr Ser Leu Ala Thr
 1           5           10           15
Ala Glu Asn Ile Cys Leu Val Cys Asp Ile Ile Cys Lys Asp Lys Pro
          20           25           30
Ser Phe Val Val Val Ser Ala Ile Ala Gly Val Thr Asp Leu Leu Val
          35           40           45
Asp Phe Cys Ser Ser Ser Leu Arg Glu Arg Glu Glu Val Leu Arg Lys
          50           55           60
Ile Glu Gly Lys His Glu Glu Ile Val Lys Asn Leu Ala Ile Pro Phe
          65           70           75           80
Pro Val Ser Thr Trp Thr Ser Arg Leu Leu Pro Tyr Leu Gln His Leu
          85           90           95
Glu Ile Ser Asp Leu Asp Phe Ala Arg Ile Leu Ser Leu Gly Glu Asp
          100          105          110
Ile Ser Ala Ser Leu Val Arg Ala Val Cys Ser Thr Arg Gly Trp Asp
          115          120          125
Leu Gly Phe Leu Glu Ala Arg Ser Val Ile Leu Thr Asp Asp Ser Tyr
          130          135          140
Arg Arg Ala Ser Pro Asn Leu Asp Leu Met Lys Ala His Trp His Gln
          145          150          155          160

```

Leu Glu Leu Asn Gln Pro Ser Tyr Ile Ile Gln Gly Phe Ile Gly Ser
 165 170 175
 Asn Gly Leu Gly Glu Thr Val Leu Leu Gly Arg Gly Gly Ser Asp Tyr
 180 185 190
 Ser Ala Thr Leu Ile Ala Glu Leu Ala Arg Ala Thr Glu Val Arg Ile
 195 200 205
 Tyr Thr Asp Val Asn Gly Ile Tyr Thr Met Asp Pro Lys Val Ile Ser
 210 215 220
 Asp Ala Gln Arg Ile Pro Glu Leu Ser Phe Glu Glu Met Gln Asn Leu
 225 230 235 240
 Ala Ser Phe Gly Ala Lys Val Leu Tyr Pro Pro Met Leu Phe Pro Cys
 245 250 255
 Met Arg Ala Gly Ile Pro Ile Phe Val Thr Ser Thr Phe Asp Pro Glu
 260 265 270
 Lys Gly Gly Thr Trp Val Tyr Ala Val Asp Lys Ser Val Ser Tyr Glu
 275 280 285
 Pro Arg Ile Lys Ala Leu Ser Leu Ser Gln Tyr Gln Ser Phe Cys Ser
 290 295 300
 Val Asp Tyr Thr Val Leu Gly Cys Gly Gly Leu Glu Glu Ile Leu Gly
 305 310 315 320
 Ile Leu Glu Ser His Gly Ile Asp Pro Glu Leu Met Ile Ala Gln Asn
 325 330 335
 Asn Val Val Gly Phe Val Met Asp Asp Ile Ile Ser Gln Glu Ala
 340 345 350
 Gln Glu His Leu Val Asp Val Leu Ser Leu Ser Ser Val Thr Arg Leu
 355 360 365
 His His Ser Val Ala Leu Ile Thr Met Ile Gly Asp Asn Leu Ser Ser
 370 375 380
 Pro Lys Val Val Ser Thr Ile Thr Glu Lys Leu Arg Gly Phe Gln Gly
 385 390 395 400
 Pro Val Phe Cys Phe Cys Gln Ser Ser Met Ala Leu Ser Phe Val Val
 405 410 415
 Ala Ser Glu Leu Ala Glu Gly Ile Ile Glu Glu Leu His Asn Asp Tyr
 420 425 430
 Val Lys Gln Lys Ala Ile Val Ala Thr
 435 440
 <210>1125
 <211>271
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1125
 Lys Ser Tyr Ser Arg His Val Gly Arg Ile Met His Leu Leu Thr Ala
 1 5 10 15
 Thr Val Thr Pro Phe Phe Pro Asn Gly Thr Ile Asp Phe Ala Ser Leu
 20 25 30
 Glu Arg Leu Leu Ser Phe Gln Asp Ala Val Gly Asn Gly Val Val Leu
 35 40 45
 Leu Gly Ser Thr Gly Glu Gly Leu Ser Leu Thr Lys Lys Glu Lys Gln
 50 55 60
 Ala Leu Ile Cys Phe Ala Cys Asp Leu Gln Leu Lys Val Pro Leu Phe
 65 70 75 80
 Val Gly Thr Ser Gly Thr Leu Leu Glu Glu Val Leu Asp Trp Ile His
 85 90 95
 Phe Cys Asn Asp Leu Pro Ile Ser Gly Phe Leu Met Thr Thr Pro Ile
 100 105 110
 Tyr Thr Lys Pro Lys Leu Cys Gly Gln Ile Leu Trp Phe Glu Ala Val
 115 120 125
 Leu Asn Ala Ala Lys His Pro Ala Ile Leu Tyr Asn Ile Pro Ser Arg
 130 135 140
 Ala Ala Thr Pro Leu Tyr Leu Asp Thr Val Lys Ala Leu Ala His His
 145 150 155 160
 Pro Gln Phe Leu Gly Ile Lys Asp Ser Gly Gly Ser Val Glu Glu Phe
 165 170 175
 Gln Ser Tyr Lys Ser Ile Ala Pro His Ile Gln Leu Tyr Cys Gly Asp

180 185 190
 Asp Val Phe Trp Ser Glu Met Ala Ala Cys Gly Ala His Gly Leu Ile
 195 200 205
 Ser Val Leu Ser Asn Ala Trp Pro Glu Glu Ala Arg Glu Tyr Val Leu
 210 215 220
 Asn Pro Gln Glu Gln Asp Tyr Arg Ser Leu Trp Met Glu Thr Cys Arg
 225 230 235 240
 Trp Val Tyr Thr Thr Thr Asn Pro Ile Gly Ile Lys Ala Ile Leu Ala
 245 250 255
 Tyr Lys Lys Ala Ile Thr His Ala His Cys Ala Cys Pro Cys Leu
 260 265 270

<210>1126

<211>256

<212>PRT

<213>Chlamydia pneumoniae

<400>1126

Phe Phe Ile Gln Lys Met Lys Tyr Asn Ser Arg Glu Lys Ile Lys Ser
 1 5 10 15
 Ala Leu Arg Ile Cys Ser Ser Tyr Cys Ile Thr Val Phe Arg Asn Asn
 20 25 30
 Phe Ser Leu Ser Cys Tyr Asp Lys Ile Phe Tyr Ser Leu Ser Cys Tyr
 35 40 45
 Val Phe Asn Gly Pro Asn Ser Ile Gly Arg Cys Arg Ser Phe Cys Phe
 50 55 60
 Phe Arg Gly Lys Lys Thr Glu Val Glu Thr Lys Glu Val Lys Ile Lys
 65 70 75 80
 Asp Glu Ile Arg Pro Ser Leu Glu Gly Asn Asp Pro Val Lys Val Ala
 85 90 95
 Glu Ser Phe Pro Lys Arg Arg Ala Ala Leu Glu Ser Leu Ser Ser Gln
 100 105 110
 Ser Ser Ile Gly Asn Leu Cys Ala Ile Ser Asn Phe Leu Asp Ser Gln
 115 120 125
 Met Leu Ser Arg Asn Phe Ser Lys Glu Ile Trp Gly Ser Thr Ile Phe
 130 135 140
 Thr Arg Ser Lys Ser Thr Cys Asp Ala Glu Gly Ser Glu Pro Phe Arg
 145 150 155 160
 Tyr Thr Ala Cys Gly Tyr Leu Ala Gly Leu Arg Ser Lys Leu Ala Gly
 165 170 175
 Ser Tyr Glu Leu Gly Val Thr Ala Gly Leu Leu Gln Gly Arg Leu Lys
 180 185 190
 Asp Val Ser Asp Ser His Arg Thr Arg Ala Thr Ser Ser Ile Leu Ser
 195 200 205
 Val His Gly Ser Met Val Thr Arg Pro Leu Ser Cys Thr Lys Tyr Ile
 210 215 220
 Val Gly Lys Ala Arg Pro Leu Leu Phe Phe Phe Arg Leu Thr Ser Asp
 225 230 235 240
 Val Arg Arg Asp Leu Lys Lys Lys Phe Arg Leu Glu Phe Cys Lys Asp
 245 250 255

<210>1127

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1127

His Ile Leu Phe Tyr Ser Lys Phe Thr Tyr Arg Thr Pro Leu Arg Val
 1 5 10 15
 Thr Ser Pro Ser Gly Arg His Asp Phe Asn Ile Asp Met His Val Ala
 20 25 30
 Pro Lys Ile Gly Ala Val Leu Ser His Gly Thr Arg Glu Ala Lys Glu
 35 40 45
 Ile Pro Gly Ser Ser Lys Asp Tyr Ala Phe Phe Ser Leu Thr Ala Arg
 50 55 60
 Glu Ser Leu Met Ile Ser Glu Lys Leu Ala Met Thr Phe Gln Val Ser
 65 70 75 80
 Glu Val Ile Gln Asn Cys Tyr Ser Gln Cys Thr Lys Val Thr Lys Thr

85 90 95
 Asn Leu Lys Glu Gln Tyr Arg His Leu Ser His Asn Thr Gly Phe Glu
 100 105 110
 Leu Ser Val Lys Ser Ala Phe
 115
 <210>1128
 <211>810
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1128
 Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser Val
 1 5 10 15
 Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr Phe
 20 25 30
 Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
 35 40 45
 Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly Ile
 50 55 60
 Gly Leu Ser Ala Leu Gly Gly Val Leu Met Ile Ser Gly Leu Leu Cys
 65 70 75 80
 Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile Pro
 85 90 95
 Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala Ala
 100 105 110
 Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr
 115 120 125
 Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser Lys
 130 135 140
 Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg Val
 145 150 155 160
 Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu Arg
 165 170 175
 Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn Gly
 180 185 190
 Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu Phe
 195 200 205
 His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly
 210 215 220
 Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met Ser
 225 230 235 240
 Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn Ser
 245 250 255
 Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu Glu
 260 265 270
 Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe Leu
 275 280 285
 Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp Leu
 290 295 300
 Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Arg Asp Ala
 305 310 315 320
 Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala Val Phe Trp Val Glu Glu
 325 330 335
 Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu Gly Asp Trp Gly Thr Val
 340 345 350
 Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp Glu Ile Thr Phe His Glu
 355 360 365
 Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg Leu His Arg Lys Cys Ala
 370 375 380
 Leu Ala Lys Thr Thr Phe Glu Lys Xaa Arg Ser Lys Lys Asn Leu Gln
 385 390 395 400
 Ala Val Xaa Glu Ala Asn Ala Arg Arg Leu Lys Tyr Val Arg Asp Trp
 405 410 415
 Tyr Asp Gln Xaa Phe Gln Lys Ala Gly Glu Arg Leu Glu Lys Leu His
 420 425 430

Ala Leu Tyr Pro Glu Val Ser Val Ser Ile Arg Glu Asn Lys Ile Gln
 435 440 445
 Glu Thr Arg Ser Asn Leu Xaa Lys Ala Tyr Glu Ala Ile Glu Xaa Asn
 450 455 460
 Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp Tyr Trp Lys Glu Glu Glu
 465 470 475 480
 Lys Arg Glu Ala Xaa Phe Arg Glu Arg Gly Asn Xaa Ile Leu Ser Pro
 485 490 495
 Glu Glu Leu Glu Xaa Ser Leu Glu Gln Phe Asp His Gly Leu Lys Asn
 500 505 510
 Phe Ser Glu Lys Leu Met Glu Leu Glu Gly His Ile Leu Lys Leu Gln
 515 520 525
 Lys Glu Ala Thr Ala Glu Val Glu Asn Lys Ile Leu Ser Asp Ala Glu
 530 535 540
 Ser Arg Leu Glu Ile Val Phe Glu Asp Val Lys Glu Met Pro Cys Arg
 545 550 555 560
 Ile Glu Glu Ile Glu Lys Thr Leu Arg Met Ala Xaa Leu Pro Leu Leu
 565 570 575
 Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys Ser Gln Tyr Asn Ser Cys
 580 585 590
 Ala Glu Met Leu Glu Lys Val Lys Pro Tyr Cys Lys Glu Ser Leu Ala
 595 600 605
 Tyr Val Thr Ser Lys Glu Arg Leu Val Ser Leu Asp Glu Asp Leu Arg
 610 615 620
 Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe Gln Gly Asp Ser Gly Leu
 625 630 635 640
 Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Arg Glu Arg Ile Gln
 645 650 655
 Glu Phe Glu Thr Gln Gly Leu Asp Leu Val Glu Lys Glu Leu Leu Cys
 660 665 670
 Val Ser Ser Arg Leu Arg Asn Thr Glu Cys Asp Cys Val Ser Gly Val
 675 680 685
 Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp
 690 695 700
 Glu Ile Tyr Arg Val Arg Val Gln Ser Arg Trp Met Thr Met Ser Glu
 705 710 715 720
 Arg Leu Arg Glu Gly Val Gln Ala Cys Asn Lys Met Leu Lys Ala Gly
 725 730 735
 Leu Ser Glu Glu Asp Lys Val Leu Lys Glu Glu Glu Tyr Trp Leu Tyr
 740 745 750
 Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg Leu Val Gly Thr Lys Ile
 755 760 765
 Val Ala Thr Gln Gln Arg Val Ala Ala Phe Glu Ser Ile Glu Val Pro
 770 775 780
 Glu Ile Pro Glu Ala Pro Glu Glu Lys Pro Ser Leu Leu Asp Lys Ala
 785 790 795 800
 Arg Ser Leu Phe Thr Arg Glu Asp His Thr
 805 810

<210>1129

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1129

Val Ala Cys Arg Ala Gly Ser Ser Glu Gly Ala Thr Glu Thr Pro Ser
 1 5 10 15
 Gly Ile Ser Ser Gly Arg Thr Val Gly Thr Ser Arg Phe Ala Lys Arg
 20 25 30
 His Arg Ser Pro Glu Thr Thr Ser Thr Pro Pro Asn Ala Glu Arg Pro
 35 40 45
 Met Pro Asn Pro Lys Glu Ile Ala Ala Leu Asn Pro Glu Ile Pro Asn
 50 55 60
 Val Arg Lys Arg Ala Pro Glu Ile Lys Lys Ser Thr Pro Arg Thr Lys
 65 70 75 80
 Lys Val Ile Ala Lys Thr Arg Asn Leu Asp Arg Gln Lys Lys Ala Pro

85 90 95
 Thr Glu Trp Ser Gly Gly Gly Gly Ser Cys Gly Asp Arg Gly Thr
 100 105 110
 Cys Ile Met Asn Leu Trp Arg His His Ala Gln Thr His Lys Leu Asn
 115 120 125
 Pro Leu Ser Tyr
 130
 <210>1130
 <211>320
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1130
 Trp Arg His Arg Phe Ile Met Gln Val Pro Leu Ser Pro Gln Leu Pro
 1 5 10 15
 Pro Pro Pro Pro Asp His Ser Val Gly Ala Phe Phe Cys Leu Ser Lys
 20 25 30
 Phe Arg Val Leu Ala Ile Thr Phe Leu Val Leu Gly Val Leu Phe Leu
 35 40 45
 Ile Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Ser Gly Leu Ser Ala
 50 55 60
 Ala Ile Ser Phe Gly Leu Gly Ile Gly Leu Ser Ala Leu Gly Gly Val
 65 70 75 80
 Leu Val Val Ser Gly Leu Leu Cys Leu Leu Ala Lys Arg Glu Val Pro
 85 90 95
 Thr Val Arg Pro Glu Glu Ile Pro Glu Gly Val Ser Val Ala Pro Ser
 100 105 110
 Glu Glu Pro Ala Leu Gln Ala Thr Gln Lys Thr Leu Ala Gln Leu Pro
 115 120 125
 Lys Glu Leu Asp Gln Leu Asp Arg Tyr Ile Gln Glu Val Val Ser Cys
 130 135 140
 Leu Gly Lys Leu Lys Asp Leu Arg Cys Glu Asp Gln Gly Leu Leu Lys
 145 150 155 160
 Asp Ala Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp Met
 165 170 175
 Met Thr Glu Phe Val Glu Leu Gln Gln Ile Met Asp Gln Glu Gly Trp
 180 185 190
 Tyr Leu Lys Cys Leu Ile Gln Glu Met Arg Asp Ile Gly Ser Thr Leu
 195 200 205
 Phe Met Ser Gln Val Ser Leu Phe Lys Leu Trp Glu Trp Leu Gly Tyr
 210 215 220
 Leu Pro Ser Gly Asp Val Arg Gly Glu Arg Leu Lys Lys Ser Ala Arg
 225 230 235 240
 Glu Val Val Asp Arg Phe Met Arg Arg Ile Cys Asp Thr Arg Lys Val
 245 250 255
 Ala Met Thr Phe Asp Arg Asn Ala Tyr Gly Val Ala Lys Thr Ala Phe
 260 265 270
 Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys Val Tyr Lys Ser Met Thr
 275 280 285
 Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr Lys Lys Thr Lys Ile Leu
 290 295 300
 Arg Asp Glu Glu Lys Ile Leu Arg Ile Cys Tyr Leu Glu Leu Arg Arg
 305 310 315 320
 <210>1131
 <211>249
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1131
 Gly Glu Asp Ile Lys Asp Met Leu Ser Arg Val Glu Glu Ile Glu Met
 1 5 10 15
 Met Leu Arg Val Ile Glu Leu Pro Leu Leu Pro Ile Lys Gln Ala Leu
 20 25 30
 Glu Lys Ala Phe Val Gln Tyr Asn Ser Tyr Lys Ala Lys Leu Thr Lys
 35 40 45
 Val Glu Pro Cys Phe Arg Glu Ser Pro Ala Tyr Ile Thr Ser Glu Glu

50	55	60
Arg Leu Xaa Ser Leu Asp Gln Thr Leu Glu Arg Ala Tyr Lys Glu Tyr		
65	70	75
Gln Lys Arg Phe Gln Glu Pro Ser Arg Leu Glu Ser Glu Val Ser Gly		80
	85	90
Cys Arg Glu His Leu Arg Glu Gln Val Lys Gln Phe Glu Thr Gln Gly		95
	100	105
Leu Asp Leu Ile Lys Glu Glu Leu Ile Phe Val Ser Asp Val Leu Phe		110
	115	120
Arg Lys Met Val Ser Cys Leu Val Ser Thr Val His Val Pro Phe Met		125
	130	135
Glu Phe Tyr Tyr Glu Tyr Phe Glu Leu His Arg Leu Arg Leu Arg Ala		140
	145	150
Gln Trp Met Ala Asn Ala Glu Ile Tyr Ser Lys Val Arg Lys Ala Phe		155
	160	165
Pro Glu Met Leu Lys Glu Thr Leu Glu Lys Ala Lys Ala Pro Arg Glu		170
	175	180
Glu Glu Tyr Trp Leu Leu Cys Glu Glu Arg Lys Ser Lys Glu Lys Arg		185
	190	195
Leu Ile Leu Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Lys Asp Leu		200
	205	210
Glu Pro Pro Pro Ile Lys Glu Thr Gly Lys Gln Lys Arg Lys Lys Glu		215
	220	225
Tyr Ser Phe Phe Ile Arg Leu Lys Ser		230
	235	240
	245	

<210>1132

<211>679

<212>PRT

<213>Chlamydia pneumoniae

<400>1132

Met Pro Glu Pro Leu Tyr Thr Asn Lys Leu Ile Thr Glu Lys Ser Pro		
1	5	10
Tyr Leu Leu Leu Tyr Ala His Thr Pro Val Asn Trp Tyr Pro Trp Gly		15
	20	25
Ala Glu Ala Phe His Ile Ala Ala Ile Glu Asn Lys Pro Val Phe Leu		30
	35	40
Ser Ile Gly Cys Lys His Ser Arg Trp Cys Gln Val Met Leu Gln Glu		45
	50	55
Ser Tyr Thr Asn Pro Glu Ile Ala Ala Met Leu Asn Glu Tyr Phe Val		60
	65	70
Asn Val Lys Val Asp Lys Glu Glu Leu Pro Tyr Val Ala Lys Leu Tyr		75
	80	85
Gly Asp Leu Ala Gln Met Leu Ala Val Ser Gly Asp His Gln Glu Thr		90
	95	100
Val Ser Trp Pro Leu Asn Val Phe Leu Thr Pro Asp Leu Val Pro Phe		105
	110	115
Phe Ser Val Asn Tyr Leu Gly Asn Glu Gly Lys Leu Gly Leu Pro Ser		120
	125	130
Phe Pro Gln Ile Ile Asp Lys Leu His Phe Met Trp Glu Asp Ala Glu		135
	140	145
Glu Arg Glu Ala Leu Val Glu Gln Ala Met Arg Phe Leu Glu Ile Ala		150
	155	160
Ser Phe Leu Glu Gly Cys Val Arg Lys Glu Ile Leu Asp Glu Ser Ser		165
	170	175
Leu Lys Arg Thr Val Ala Ala Leu Tyr Gln Asp Ile Asp Pro His Tyr		180
	185	190
Gly Gly Val Lys Ala Phe Pro Lys Arg Leu Pro Gly Leu Leu Gln		195
	200	205
Phe Phe Leu Arg Tyr Ser Leu Glu Tyr Gln Glu Ser Arg Gly Leu Phe		210
	215	220
Phe Val Asp Arg Ser Leu Ser Met Val Ala Leu Gly Gly Val Arg Asp		225
	230	235
His Ile Gly Gly Val Tyr Ser Tyr Thr Ile Asp Asp Lys Trp Leu		240
	245	250
	255	260
	265	270

Ile Pro Ala Phe Glu Lys Arg Leu Ile Asp Asn Ala Leu Met Ala Leu
 275 280 285
 Asn Tyr Leu Glu Ala Trp Ala Cys Leu Gly Lys Glu Glu Tyr Arg Gly
 290 295 300
 Ile Gly Lys Gln Ile Leu Ser Tyr Ile Leu Ser Glu Leu Tyr Ser Pro
 305 310 315 320
 Glu Val Gly Ala Phe Tyr Ser Ser Glu Gln Ala Glu Asn Trp Gly Ala
 325 330 335
 Gly Gly Gln Asn Phe Tyr Thr Trp Ser Val Glu Glu Ile Ser Asn Ala
 340 345 350
 Leu Gly Glu Asp Ala Glu Ile Phe Cys Asp Tyr Tyr Gly Ile Ser Arg
 355 360 365
 Glu Gly Phe Phe Asn Gly Arg Asn Ile Leu His Ile Pro Val His Arg
 370 375 380
 Glu Ile Glu Glu Leu Ser Glu Lys Tyr His Arg Ser Ile Glu Ala Ile
 385 390 395 400
 Glu Asp Ile Val Asp Arg Ser Arg Asp Ile Leu Lys Gly Ile Arg Ala
 405 410 415
 Gln Arg Ser His Arg Ser Lys Asp Asp Leu Ser Leu Thr Phe Asn Asn
 420 425 430
 Gly Trp Met Ile Tyr Thr Phe Ala Tyr Ala Gly Arg Leu Leu Gly Glu
 435 440 445
 Val Glu Tyr Ile Glu Ile Glu Lys Lys Cys Gly Glu Phe Val Arg Asn
 450 455 460
 Ser Leu Tyr Lys His His Glu Leu Tyr Arg Arg Trp Arg Glu Gly Glu
 465 470 475 480
 Ala Lys Tyr Arg Ala Ser Leu Glu Asp Tyr Gly Ala Leu Ile Leu Gly
 485 490 495
 Val Leu Ala Leu Tyr Glu Ser Gly Cys Gly Ser Phe Trp Leu Ser Phe
 500 505 510
 Ala Glu Glu Leu Met Gln Glu Val Val Leu Ser Phe Arg Ser Glu Glu
 515 520 525
 Gly Gly Phe Tyr Ser Asp Asp Gly Arg Asp Ser Thr Leu Leu Ile Lys
 530 535 540
 Gln Ser Pro Leu Ser Asp Gly Glu Thr Ile Ser Gly Asn Ala Leu Ile
 545 550 555 560
 Cys Gln Cys Leu Leu Ser Leu His Leu Ile Thr Glu Lys Lys His Tyr
 565 570 575
 Leu Thr Tyr Ala Glu Asp Ile Leu Gln Ile Ala Gln Ala Cys Ala His
 580 585 590
 Thr His Lys Phe Ser Ser Leu Gly Leu Leu Ile Ala Ser Gln Asn Tyr
 595 600 605
 Phe Ser Arg Lys His Val Lys Val Leu Ile Pro Leu Gly Asp Gln Glu
 610 615 620
 Asp Arg Ser Pro Val Leu Lys Cys Leu Ser Gly Leu Phe Leu Pro Tyr
 625 630 635 640
 Leu Ser Leu Ile Trp Met Thr Gln Glu Asn Gln Glu His Leu Glu Thr
 645 650 655
 Val Leu Pro Glu Tyr Glu His Cys Leu Ile Pro Lys Arg Gly Ile Ala
 660 665 670
 Gln Leu Arg Gln Phe Met Phe
 675
 <210>1133
 <211>365
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1133
 Glu Val Met Lys Leu Tyr Gln Thr Leu Arg Gly Ile Val Leu Val Ser
 1 5 10 15
 Thr Gly Cys Ile Phe Leu Gly Met His Gly Gly Tyr Ala Ala Glu Val
 20 25 30
 Pro Val Thr Ser Ser Gly Tyr Glu Asn Leu Leu Glu Ser Lys Glu Gln
 35 40 45
 Asp Pro Ser Gly Leu Ala Ile His Asp Arg Ile Leu Phe Lys Val Asp

50 55 60
 Glu Glu Asn Val Val Thr Ala Leu Asp Val Ile His Lys Leu Asn Leu
 65 70 75 80
 Leu Phe Tyr Asn Ser Tyr Pro His Leu Ile Asp Ser Phe Pro Ala Arg
 85 90 95
 Ser Gln Tyr Tyr Thr Ala Met Trp Pro Val Val Leu Glu Ser Val Ile
 100 105 110
 Asp Glu Phe Leu Met Val Ala Asp Ala Lys Ala Lys Arg Ile Ala Thr
 115 120 125
 Asp Pro Thr Ala Val Asn Gln Glu Ile Glu Glu Met Phe Gly Arg Asp
 130 135 140
 Leu Ser Pro Leu Tyr Ala His Phe Glu Met Ser Pro Asn Asp Ile Phe
 145 150 155 160
 Asn Val Ile Asp Arg Thr Leu Thr Ala Gln Arg Val Met Gly Met Met
 165 170 175
 Val Arg Ser Lys Val Met Leu Lys Val Thr Pro Gly Lys Ile Arg Glu
 180 185 190
 Tyr Tyr Arg Lys Leu Glu Glu Glu Ala Ser Arg Lys Val Ile Trp Lys
 195 200 205
 Tyr Arg Val Leu Thr Ile Lys Ala Asn Thr Glu Ser Leu Ala Ser Gln
 210 215 220
 Ile Ala Asp Lys Val Arg Ala Arg Leu Asn Glu Ala Lys Thr Trp Asp
 225 230 235 240
 Lys Asp Arg Leu Thr Ala Leu Val Ile Ser Gln Gly Gly Gln Leu Val
 245 250 255
 Cys Ser Glu Glu Phe Ser Arg Glu Asn Ser Glu Leu Ser Gln Ser His
 260 265 270
 Lys Gln Glu Leu Asp Leu Ile Gly Tyr Pro Lys Glu Leu Cys Gly Leu
 275 280 285
 Pro Lys Ala His Lys Ser Gly Tyr Lys Leu Tyr Met Leu Leu Asp Lys
 290 295 300
 Thr Ser Gly Ser Ile Glu Pro Leu Asp Val Met Glu Ser Lys Ile Lys
 305 310 315 320
 Gln His Leu Phe Ala Leu Glu Ala Glu Ser Val Glu Lys Gln Tyr Lys
 325 330 335
 Asp Arg Leu Arg Lys Arg Tyr Gly Tyr Asp Ala Ser Met Ile Ala Lys
 340 345 350
 Leu Leu Ser Glu Glu Ala Pro Pro Leu Phe Ser Leu Leu
 355 360 365
 <210>1134
 <211>277
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1134
 Val Thr Arg Ser Ser Pro Ala Gln Leu Ser Arg Phe Leu Ser Glu Ile
 1 5 10 15
 Gln Asn Lys Pro Lys Lys Ser Leu Ser Gln Asn Phe Leu Val Asp Gln
 20 25 30
 Asn Ile Val Lys Lys Ile Val Ala Thr Ser Glu Val Ile Pro Gln Asp
 35 40 45
 Trp Val Leu Glu Ile Gly Pro Gly Phe Gly Ala Leu Thr Glu Glu Leu
 50 55 60
 Ile Ala Ala Gly Ala Gln Val Ile Ala Ile Glu Lys Asp Pro Met Phe
 65 70 75 80
 Ala Pro Ser Leu Glu Glu Leu Pro Ile Arg Leu Glu Ile Ile Asp Ala
 85 90 95
 Cys Lys Tyr Pro Leu Asp Gln Leu Gln Glu Tyr Lys Thr Leu Gly Lys
 100 105 110
 Gly Arg Val Val Ala Asn Leu Pro Tyr His Ile Thr Thr Pro Leu Leu
 115 120 125
 Thr Lys Leu Phe Leu Glu Ala Pro Asp Phe Trp Lys Thr Val Thr Val
 130 135 140
 Met Val Gln Asp Glu Val Ala Arg Arg Ile Val Ala Gln Pro Gly Gly
 145 150 155 160

Arg Asp Tyr Gly Ser Leu Thr Ile Phe Leu Gln Phe Phe Asp Ile
 165 170 175
 His Tyr Ala Phe Lys Val Ser Ala Ser Cys Phe Tyr Pro Lys Pro Gln
 180 185 190
 Val Gln Ser Ala Val Ile His Met Lys Val Lys Glu Thr Leu Pro Leu
 195 200 205
 Ser Asp Glu Glu Ile Pro Val Phe Phe Thr Leu Thr Arg Thr Ala Phe
 210 215 220
 Gln Gln Arg Arg Lys Val Leu Ala Asn Thr Leu Lys Gly Leu Tyr Pro
 225 230 235 240
 Lys Glu Gln Val Glu Gln Ala Leu Lys Glu Leu Gly Leu Leu Leu Asn
 245 250 255
 Val Arg Pro Glu Val Leu Ser Leu Asn Asp Tyr Leu Ala Leu Phe His
 260 265 270
 Lys Met Gln Ala Gly
 275
 <210>1135
 <211>644
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1135
 Met Thr Ser Ser Ser Cys Pro Leu Leu Asp Leu Ile Leu Ser Pro Ala
 1 5 10 15
 Asp Leu Lys Lys Leu Ser Ile Ser Gln Leu Pro Gly Leu Ala Glu Glu
 20 25 30
 Ile Arg Tyr Arg Ile Ile Ser Val Leu Ser Gln Thr Gly Gly His Leu
 35 40 45
 Ser Ser Asn Leu Gly Ile Val Glu Leu Thr Ile Ala Leu His Tyr Val
 50 55 60
 Phe Ser Ser Pro Lys Asp Lys Phe Ile Phe Asp Val Gly His Gln Thr
 65 70 75 80
 Tyr Pro His Lys Leu Leu Thr Gly Arg Asn Asn Glu Gly Phe Asp His
 85 90 95
 Ile Arg Asn Asp Asn Gly Leu Ser Gly Phe Thr Asn Pro Thr Glu Ser
 100 105 110
 Asp His Asp Leu Phe Phe Ser Gly His Ala Gly Thr Ala Leu Ser Leu
 115 120 125
 Ala Leu Gly Met Ala Gln Thr Thr Pro Leu Glu Ser Arg Thr His Val
 130 135 140
 Ile Pro Ile Leu Gly Asp Ala Ala Phe Ser Cys Gly Leu Thr Leu Glu
 145 150 155 160
 Ala Leu Asn Asn Ile Ser Thr Asp Leu Ser Lys Phe Val Val Ile Leu
 165 170 175
 Asn Asp Asn Asn Met Ser Ile Ser Lys Asn Val Gly Ala Met Ser Arg
 180 185 190
 Ile Phe Ser Arg Trp Leu His His Pro Ala Thr Asn Lys Leu Thr Lys
 195 200 205
 Gln Val Glu Lys Trp Leu Ala Lys Ile Pro Arg Tyr Gly Asp Ser Leu
 210 215 220
 Ala Lys His Ser Arg Arg Leu Ser Gln Cys Val Lys Asn Leu Phe Cys
 225 230 235 240
 Pro Thr Pro Leu Phe Glu Gln Phe Gly Leu Ala Tyr Val Gly Pro Ile
 245 250 255
 Asp Gly His Asn Val Lys Lys Leu Ile Pro Ile Leu Gln Ser Val Arg
 260 265 270
 Asn Leu Pro Phe Pro Ile Leu Val His Val Cys Thr Thr Lys Gly Lys
 275 280 285
 Gly Leu Asp Gln Ala Gln Asn Asn Pro Ala Lys Tyr His Gly Val Arg
 290 295 300
 Ala Asn Phe Asn Lys Arg Glu Ser Ala Lys His Leu Pro Ala Ile Lys
 305 310 315 320
 Pro Lys Pro Ser Phe Pro Asp Ile Phe Gly Gln Thr Leu Cys Glu Leu
 325 330 335
 Gly Glu Val Ser Ser Arg Leu His Val Val Thr Pro Ala Met Ser Ile

340 345 350
 Gly Ser Arg Leu Glu Gly Phe Lys Gln Lys Phe Pro Glu Arg Phe Phe
 355 360 365
 Asp Val Gly Ile Ala Glu Gly His Ala Val Thr Phe Ser Ala Gly Ile
 370 375 380
 Ala Lys Ala Gly Asn Pro Val Ile Cys Ser Ile Tyr Ser Thr Phe Leu
 385 390 395 400
 His Arg Ala Leu Asp Asn Val Phe His Asp Val Cys Met Gln Asp Leu
 405 410 415
 Pro Val Ile Phe Ala Ile Asp Arg Ala Gly Leu Ala Tyr Gly Asp Gly
 420 425 430
 Arg Ser His His Gly Ile Tyr Asp Met Ser Phe Leu Arg Ala Met Pro
 435 440 445
 Gln Met Ile Ile Cys Gln Pro Arg Ser Gln Val Val Phe Gln Gln Leu
 450 455 460
 Leu Tyr Ser Ser Leu His Trp Ser Ser Pro Ser Ala Ile Arg Tyr Pro
 465 470 475 480
 Asn Ile Pro Ala Pro His Gly Asp Pro Leu Thr Gly Asp Pro Asn Phe
 485 490 495
 Leu Arg Ser Pro Gly Asn Ala Glu Thr Leu Ser Gln Gly Glu Asp Val
 500 505 510
 Leu Ile Ile Ala Leu Gly Thr Leu Cys Phe Thr Ala Leu Ser Ile Lys
 515 520 525
 His Gln Leu Leu Ala Tyr Gly Ile Ser Ala Thr Val Val Asp Pro Ile
 530 535 540
 Phe Ile Lys Pro Phe Asp Asn Asp Leu Phe Ser Leu Leu Leu Met Ser
 545 550 555 560
 His Ser Lys Val Ile Thr Ile Glu Glu His Ser Ile Arg Gly Gly Leu
 565 570 575
 Ala Ser Glu Phe Asn Asn Phe Val Ala Thr Phe Asn Phe Lys Val Asp
 580 585 590
 Ile Leu Asn Phe Ala Ile Pro Asp Thr Phe Leu Ser His Gly Ser Lys
 595 600 605
 Glu Ala Leu Thr Lys Ser Ile Gly Leu Asp Glu Ser Ser Met Thr Asn
 610 615 620
 Arg Ile Leu Thr His Phe Asn Phe Arg Ser Lys Lys Gln Thr Val Gly
 625 630 635 640
 Asp Val Arg Val

<210>1136

<211>127

<212>PRT

<213>Chlamydia pneumoniae

<400>1136

Ala Ser Pro Ala Arg Ser Ile Ala Lys Ile Thr Gly Arg Ser Cys Met
 1 5 10 15
 Gln Thr Ser Trp Lys Thr Leu Ser Arg Ala Arg Cys Lys Asn Val Glu
 20 25 30
 Tyr Ile Glu Gln Ile Thr Gly Leu Pro Ala Phe Ala Met Pro Ala Leu
 35 40 45
 Lys Val Thr Ala Trp Pro Ser Ala Ile Pro Thr Ser Lys Lys Arg Ser
 50 55 60
 Gly Asn Phe Cys Leu Lys Pro Ser Lys Arg Asp Pro Ile Asp Ile Ala
 65 70 75 80
 Gly Val Thr Thr Trp Arg Arg Glu Glu Thr Ser Pro Ser Ser His Ser
 85 90 95
 Val Trp Pro Asn Ile Ser Gly Lys Glu Gly Leu Gly Leu Ile Ala Gly
 100 105 110
 Arg Cys Phe Ala Asp Ser Arg Leu Leu Lys Phe Ala Leu Thr Pro
 115 120 125

<210>1137

<211>554

<212>PRT

<213>Chlamydia pneumoniae

<400>1137

```

Met Ser Ser Pro Pro Gln Ala Val Ala Ser Leu Thr Glu Arg Ile Lys
 1          5          10          15
Thr Leu Leu Glu Ser Asn Phe Cys Gln Ile Ile Val Lys Gly Glu Leu
          20          25          30
Ser Asn Val Ser Leu Gln Pro Ser Gly His Leu Tyr Phe Gly Ile Lys
          35          40          45
Asp Ser Gln Ala Phe Leu Asn Gly Ala Phe Phe His Phe Lys Ser Lys
          50          55          60
Tyr Tyr Asp Arg Lys Pro Lys Asp Gly Asp Ala Val Ile Ile His Gly
          65          70          75          80
Lys Leu Ala Val Tyr Ala Pro Arg Gly Gln Tyr Gln Ile Val Ala His
          85          90          95
Ala Leu Val Tyr Ala Gly Glu Gly Asp Leu Leu Gln Lys Phe Glu Glu
          100          105          110
Thr Lys Arg Arg Leu Thr Ala Glu Gly Tyr Phe Ala Thr Glu Lys Lys
          115          120          125
Lys Pro Leu Pro Phe Ala Pro Gln Cys Ile Gly Val Ile Thr Ser Pro
          130          135          140
Thr Gly Ala Val Ile Gln Asp Ile Leu Arg Val Leu Ser Arg Arg Ala
          145          150          155          160
Arg Asn Tyr Lys Ile Leu Val Tyr Pro Val Thr Val Gln Gly Asn Ser
          165          170          175          180
Ala Ala His Glu Ile Ser Lys Ala Ile Glu Val Met Asn Ala Glu Asn
          180          185          190
Leu Ala Asp Val Leu Ile Ile Ala Arg Gly Gly Gly Ser Ile Glu Asp
          195          200          205
Leu Trp Ala Phe Asn Glu Glu Ile Leu Val Lys Ala Ile His Ala Ser
          210          215          220
Thr Ile Pro Ile Val Ser Ala Val Gly His Glu Thr Asp Tyr Thr Leu
          225          230          235          240
Cys Asp Phe Ala Ser Asp Val Arg Ala Pro Thr Pro Ser Ala Ala Ala
          245          250          255
Glu Ile Val Cys Lys Ser Ser Glu Glu Gln Val Gln Val Phe Glu Gly
          260          265          270
Tyr Leu Arg His Leu Leu Ser His Ser Arg Gln Leu Leu Thr Ser Lys
          275          280          285
Lys Gln Gln Leu Leu Pro Trp Arg Arg Phe Leu Asp Arg Ala Glu Phe
          290          295          300
Tyr Thr Thr Ala Gln Gln Leu Asp Ser Ile Glu Ile Ala Ile Gln
          305          310          315          320
Lys Gly Val Gln Gly Lys Ile His Glu Ser Lys Gln Arg Tyr Asp Asn
          325          330          335
Ile Ser Arg Trp Leu Gln Gly Asp Leu Val Ser Arg Met Thr Cys Arg
          340          345          350
Leu Gln Ser Leu Lys Lys Met Leu Ser Gln Ala Leu Ser His Lys Ala
          355          360          365
Leu Ser Leu Gln Val Arg Cys His Gln Leu Lys Lys Ser Leu Thr Tyr
          370          375          380
Pro Arg Gln Ile Gln Gln Ala Ser Gln Lys Leu Ser Pro Trp Arg Gln
          385          390          395          400
Gln Leu Asp Thr Leu Ile Ser Arg Arg Leu His Tyr Gln Lys Glu Glu
          405          410          415
Tyr Phe His Lys His Thr Arg Leu Lys His Ala His Asn Val Leu Glu
          420          425          430
Gln Gln Leu Arg Ser His Val Gln Lys Leu Glu Leu Leu Gly Arg Arg
          435          440          445
Leu Ser Arg Gly Cys Glu Leu Asn Leu Gln Asn Gln Lys Ile Ala Tyr
          450          455          460
Ala Asn Val Lys Glu Thr Leu Ala Thr Ile Leu Glu Arg Arg Tyr Glu
          465          470          475          480
Asn Ser Val Ala Arg Tyr Ser Ala Leu Lys Glu Gln Leu His Ser Leu
          485          490          495
Asn Pro Lys Asn Val Leu Lys Arg Gly Tyr Ala Met Leu Phe Asp Phe

```

1134

180 185 190
 Ala Thr Thr Lys Gly Ser Lys Thr Ser Thr Thr Glu Ser Ser Lys Lys
 195 200 205
 Lys Lys Lys Thr Lys His Ser Leu His Arg Thr Thr Ser Ser Ile His
 210 215 220
 Lys Arg Ser Ala Pro Lys Pro Met Val Pro Ser Lys Lys Arg Lys Pro
 225 230 235 240
 Val Leu Leu Lys Lys Thr Val Pro Leu Pro Ile Glu Asp Leu Glu His
 245 250 255
 Gln Ser Ser Gly Asn Glu Ser Ser Asp Ser Ser Ser Pro Pro Pro Val
 260 265 270
 Gln Arg Lys Ala Ile Leu Pro Trp Phe Cys Lys Gln Pro Thr Asp Pro
 275 280 285

<210>1140

<211>153

<212>PRT

<213>Chlamydia pneumoniae

<400>1140

Met Leu Arg Arg Arg Ile Trp Lys Lys Thr Leu Thr Pro Asp Gln Glu
 1 5 10 15
 Asn Leu Ser Leu Pro Leu Pro Ser Pro Thr Thr Leu Lys Lys Ile His
 20 25 30
 Ala Leu His Ile Leu Val Arg Ser Gly Lys Thr Tyr Asn Glu Leu Ile
 35 40 45
 Gln Glu Gly Phe Ser Phe Thr Lys Ile Thr Asp Leu Gly Gln Ala Pro
 50 55 60
 Ser Pro Lys Gln Asp Ile Gly Phe Ser Tyr Asn Ser Leu Leu Pro Asn
 65 70 75 80
 Phe Tyr Phe His Ser Leu Val Ser Val Pro Asn Ile Ser Gly Glu Glu
 85 90 95
 Arg Ala Leu Asn Tyr His Lys Glu Gln Gln Glu Glu Met Ala Val Lys
 100 105 110
 Leu Lys Thr Met Gln Ala Cys Ser Phe Val Phe Arg Ser Leu His Leu
 115 120 125
 Pro Ser Met Gln Thr Lys Asp Lys Lys Ala Gly Phe Gly Leu Leu Thr
 130 135 140
 Phe Phe Pro Trp Lys Ile Tyr Pro Leu
 145 150

<210>1141

<211>136

<212>PRT

<213>Chlamydia pneumoniae

<400>1141

Leu Ala Met Ala Lys Asn Val Pro Leu Leu Gly Tyr Ser Ser Leu Glu
 1 5 10 15
 Gly Tyr Leu Leu Ser Lys Asp Glu Lys Lys Ala Leu Met Leu Pro Leu
 20 25 30
 Gly Lys Arg Gly Gly Val Leu Thr Leu Ser Ser Glu Ile Pro Glu Glu
 35 40 45
 Gly Leu Asn Glu Lys Arg Arg Gly Val Gly Pro Gly Ala Leu Leu Ser
 50 55 60
 Tyr Glu Glu Ala Ser Asp Tyr Cys Val Ala His Gly Tyr Tyr His Val
 65 70 75 80
 Ile Ser Pro Asn Pro Gln Leu Phe Ala Ser Ser Phe Ser Asp Lys Ile
 85 90 95
 Thr Val Glu Glu Val Ala Pro Ser Val Glu Gln Ile Arg Arg His Val
 100 105 110
 Ile Ser Gln Phe Met Phe Val Glu Tyr Asp Lys Gln Leu Ser Pro Asp
 115 120 125
 Tyr Arg Ser Tyr Ser Cys Ile Phe
 130 135

<210>1142

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1142

```

Met Ile Glu Phe Pro Ser Ala Val Trp Met Ile Glu Glu Ile Leu Pro
 1           5           10           15
Glu Cys Asp Phe Leu Ser Ile Gly Thr Asn Asp Leu Val Gln Tyr Thr
           20           25           30
Leu Gly Ile Ser Arg Glu Ser Ala Leu Pro Lys His Leu Asn Val Thr
           35           40           45
Leu Pro Pro Ala Val Ile Arg Met Ile His His Val Leu Gln Ala Ala
           50           55           60
Asn Lys Ile Arg Phe Leu Ala Phe Val Glu Arg Pro Gln Gly Ser
           65           70           75           80
Ser Val

```

<210>1143

<211>108

<212>PRT

<213>Chlamydia pneumoniae

<400>1143

```

Leu Phe Asp Ala Leu His Ile Ser Leu His Arg Asn Ile Pro Arg Met
 1           5           10           15
Gly Asn His Glu Thr Tyr Ile His Pro Gly Val Leu Pro Ser Ser His
           20           25           30
Ala Gln Asp Val Ser Arg Ser Thr Val Tyr Pro Ser Arg Ser Phe Ile
           35           40           45
Met Arg Arg Met Leu Met Gly Trp Asn Phe Asn Arg Val Pro Ser Lys
           50           55           60
Ser Ser Glu Gln Leu Met Asp Gly His Arg Ile Pro Leu Ile Phe Phe
           65           70           75           80
Gly Lys His His Pro Thr Ile Ser Ile Leu Asn Val Asn Arg Phe Ser
           85           90           95
Trp Leu Ser Ile Phe Tyr Asn Gly Glu Arg Gly Phe
           100           105

```

<210>1144

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1144

```

Met Ala Thr Lys Thr Lys Thr Gln Trp Thr Cys Asn Gln Cys Gly Ala
 1           5           10           15
Thr Ala Pro Lys Trp Leu Gly Gln Cys Pro Gly Cys His Asn Trp Asn
           20           25           30
Ser Leu Val Glu Glu Tyr Val Pro Gln Ala Arg Ser Gly Thr Ser Ser
           35           40           45
Arg Ser Ser Thr Ser Ala Ile Ala Leu Ser Ser Ile Glu Leu Glu Asn
           50           55           60
Glu Ser Arg Ile Phe Ile Asp His Ala Gly Trp Asp Arg Ile Leu Gly
           65           70           75           80
Gly Gly Val Val Arg Gly Ser Leu Thr Leu Gly Gly Asp Pro Gly
           85           90           95
Ile Gly Lys Ser Thr Leu Leu Leu Gln Thr Ala Glu Arg Leu Ala Ser
           100           105           110
Gln Lys Tyr Lys Val Leu Tyr Val Cys Gly Glu Glu Ser Val Thr Gln
           115           120           125
Thr Ser Leu Arg Ala Lys Arg Ser Ile Ser His His Leu
           130           135           140

```

<210>1145

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1145

```

Met Thr Lys Ile Gln Cys Ser Ala Gln Tyr Tyr Arg Ser Arg Pro Ala
 1           5           10           15
Glu Arg Ala Gln Thr Pro Pro Gln Pro Phe Leu Ala Arg Asp Arg Ala

```

20 25
 Asp Phe Trp Glu Arg His Pro Arg Phe Ser Ala Cys Cys Arg Val Leu
 35 40 45
 Leu Leu Val Ala Trp Val Val Leu Ala Leu Leu Phe Leu Phe Val Met
 50 55 60
 Leu Leu Pro Leu Ala Ala Gly Ser Tyr Leu Leu Ala Phe
 65 70 75

<210>1146

<211>121

<212>PRT

<213>Chlamydia pneumoniae

<400>1146

Leu Thr Tyr Thr Arg Val Asn Asp Gly His Leu Ala Pro Phe Arg Ala
 1 5 10 15
 Gly Ala Lys Trp Ile Leu Ile His Tyr Val Arg Leu Arg Arg Gln His
 20 25 30
 Asn Gln Asn Asp Phe Phe Thr Pro Gly His Ser Cys Tyr Tyr Ala Arg
 35 40 45
 Leu Ala Phe Asn Gln Thr Gln Arg Leu Tyr His Gln Leu Phe Asn Val
 50 55 60
 Glu Lys Leu Arg Ser Ile Tyr Ala Asn Met Asp Lys Asp Pro Leu Cys
 65 70 75 80
 His Pro Trp Ala Xaa Ile Pro Ile Tyr Asp Leu Leu Lys Thr Glu Asp
 85 90 95
 His Gly Asp Gly Phe Leu Glu Gln Gln Glu Asp Arg Glu Tyr Pro Ser
 100 105 110
 Arg Ala Ala Gln Asp Gln Phe Trp Gly
 115 120

<210>1147

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>1147

Val Ser Ala Glu Phe Lys Leu Met Leu Asp Leu Arg Gln Tyr Met Gly
 1 5 10 15
 Ser Val Met Gln Arg Leu Gly Leu Ser Asn Leu Phe His Cys Leu Leu
 20 25 30
 Leu Phe Leu Arg Tyr Tyr Tyr Ser Lys Leu Val Phe Gly Leu Thr Val
 35 40 45
 Leu Leu Ala Ala Ile Ser Val Ile Cys Leu Leu Gly Cys Ser Glu Pro
 50 55 60
 Ser Leu Ser Ser Phe Thr Glu Tyr Val Gly Pro Glu Tyr Ser Ala Ala
 65 70 75 80
 Ala Gln Leu Ser Ile Glu Gln Ser Cys His Asp Glu Val Tyr Gly Gln
 85 90 95
 Gln Val Val Val Thr Trp Ser Leu Pro Ser Arg Met Arg Lys Cys Leu
 100 105 110
 Pro Val Thr Leu Tyr Leu Trp Val Tyr Tyr Gly Asn Gly Lys Val Glu
 115 120 125
 Lys Leu Thr Tyr Glu Val Asn Gln Ser Ala Gly Tyr Arg Val Tyr Cys
 130 135 140
 Leu Lys Gly Leu Glu Tyr Lys Glu Leu Gln Gly Ile Ile Ser Tyr Pro
 145 150 155 160
 Leu Arg Tyr Val Ala Gly Ile Lys Arg Leu
 165 170

<210>1148

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1148

Met Val Ser Pro Leu Ser Leu Phe His Lys Met Leu Leu Glu Asn Trp
 1 5 10 15
 Thr Pro Val Glu Pro Phe Pro Trp Pro Pro Ala Glu Lys Asn Gln
 20 25 30

Lys Ile Phe Ala Trp Ala Leu Asn Gln Ser Lys Leu Ile Phe Val Ser
 35 40 45
 Thr Ser Gly Asn Ile Ala Gln Pro Arg Leu Val Thr Asp Ser Met Ser
 50 55 60
 Met Met Ile Val Asn Ala Ala Asn Arg Thr Met Ser Arg Asp Gly Ala
 65 70 75 80
 Gly Thr Asn Gln Val Leu Ser Ala Ala Val Ser Val Asp Ser Trp Gly
 85 90 95
 Cys Arg Asn Asp Leu
 100

<210>1149

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1149

Val Ala Leu Lys Ile Arg Leu Arg Gln Gln Gly Arg Arg Asn His Val
 1 5 10 15
 Val Tyr Arg Leu Val Leu Ala Asp Val Glu Ser Pro Arg Asp Gly Lys
 20 25 30
 Tyr Ile Glu Leu Leu Gly Trp Tyr Asp Pro His Ser Ser Ile Asn Tyr
 35 40 45
 Gln Leu Lys Ser Glu Arg Ile Phe Tyr Trp Leu Glu Arg Gly Ala Gln
 50 55 60
 Leu Ser Ser Lys Ala Glu Ala Leu Val Lys Gln Gly Ala Pro Gly Val
 65 70 75 80
 Tyr Ser Ala Leu Leu Ser Lys Gln Glu Ala Arg Lys Leu Val Val Arg
 85 90 95
 Lys Lys Arg Arg Ala Tyr Arg Gln Arg Arg Ser Thr Gln Arg Glu Glu
 100 105 110
 Ala Ala Lys Asp Ala Thr Lys
 115

<210>1150

<211>170

<212>PRT

<213>Chlamydia pneumoniae

<400>1150

Met Ser Glu Val Lys Pro Leu Phe Leu Lys Asn Asp Ser Phe Asp Leu
 1 5 10 15
 Ala Thr Gln Arg Phe Gln Asn Leu Ile Asn Met Leu Gln Glu Gln Ala
 20 25 30
 Glu Ile Tyr Asn Glu Tyr Glu Glu Lys Asn Ala Arg Val Gln Asn Glu
 35 40 45
 Ile Lys Glu Gln Lys Asp Phe Val Lys Arg Cys Ile Glu Asp Phe Glu
 50 55 60
 Ala Arg Gly Leu Gly Val Leu Lys Glu Glu Leu Ala Ser Leu Thr Arg
 65 70 75 80
 Asp Phe His Asp Lys Ala Lys Ala Glu Thr Ser Met Leu Ile Glu Cys
 85 90 95
 Pro Cys Ile Gly Phe Tyr Tyr Ser Ile His Gln Glu Glu Gln Arg Gln
 100 105 110
 Arg Gln Glu Arg Leu Gln Lys Met Ala Glu Arg Tyr Arg Asp Cys Lys
 115 120 125
 Gln Val Leu Glu Ala Val Gln Val Glu Gln Lys Asp Met Ile Ser Ser
 130 135 140
 Arg Val Val Val Asp Asp Ser Tyr Phe Glu Glu Glu Lys Glu Glu Gln
 145 150 155 160
 Lys Val Asp Asn Arg Lys Lys Glu Gln Asp
 165 170

<210>1151

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1151

Leu Val Phe Ser Tyr Tyr Cys Met Gly Leu Phe Phe Phe Ser Gly Ala

1 5 10 15
 Ile Ser Ser Cys Gly Leu Leu Val Ser Leu Gly Val Gly Leu Gly Leu
 20 25 30
 Ser Val Leu Gly Val Leu Leu Leu Leu Ala Gly Leu Leu Leu Phe
 35 40 45
 Lys Ile Gln Ser Met Leu Arg Glu Val Pro Lys Ala Pro Asp Leu Leu
 50 55 60
 Asp Leu Glu Asp Ala Ser Glu Arg Leu Arg Val Lys Ala Ser Arg Ser
 65 70 75 80
 Leu Ala Ser Leu Pro Lys Lys Ser Val Ser
 85 90

<210>1152

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1152

Leu Leu Leu Cys Ser Ala Met Gly Ile Phe Ser Ser Ala Lys Ala Leu
 1 5 10 15
 Ile Ala Trp Asn Lys Ala Ser Leu Asn Leu Ser Pro Ala Leu Leu Gly
 20 25 30
 Ala Ile Leu Ile Phe Glu Pro Ile Phe Gly Leu Val Leu Thr Tyr Leu
 35 40 45
 Tyr Ser Gln Ser Leu Pro Ser Leu Gln Glu Gly Ile Gly Ile Phe Leu
 50 55 60
 Met Leu Gly Gly Ser Leu Leu Cys Leu Val Leu Phe Gly Arg Lys Val
 65 70 75 80
 Gln Lys Ser Leu Glu Asn Ser Gln Val Ser Ser Ser Asn Glu
 85 90

<210>1153

<211>248

<212>PRT

<213>Chlamydia pneumoniae

<400>1153

Met Phe Pro Ser Ala Asn Gln Glu Ser Arg Thr Arg Asn Val Pro Leu
 1 5 10 15
 Gly Ile Phe His Gly Leu Val Ala Cys Leu Tyr Trp Gly Ile Val Phe
 20 25 30
 Val Ile Pro Asn Phe Leu Gly Ser Phe Gly Asp Leu Asp Ile Val Leu
 35 40 45
 Thr Arg Tyr Thr Ile Phe Gly Ile Phe Ser Leu Ile Ala Cys Ala Ile
 50 55 60
 Lys Asn Pro Ser Val Ile Lys Lys Thr Pro Leu Tyr Ile Trp Arg Lys
 65 70 75 80
 Ser Leu Leu Trp Thr Leu Leu Ile Asn Pro Val Tyr Tyr Phe Gly Ile
 85 90 95
 Thr Leu Gly Ile Arg Tyr Val Gly Ser Ala Ile Thr Val Val Ile Ala
 100 105 110
 Ser Leu Ala Pro Thr Ala Val Leu Tyr His Ser Asn Thr Lys Gln Lys
 115 120 125
 Glu Leu Pro Tyr Ser Leu Leu Phe Ala Ile Ser Ser Val Ile Ile Thr
 130 135 140
 Gly Val Ile Leu Thr His Leu Ser Ala Leu Asn Leu Pro Thr Ala Ala
 145 150 155 160
 Ser Pro Leu Tyr Ser Ile Leu Gly Val Ile Ala Val Ile Leu Ser Thr
 165 170 175
 Ser Leu Trp Val Ile Tyr Val Ile Arg Asn Gln Ser Leu Leu Glu Lys
 180 185 190
 His Pro Xaa Leu Thr Pro Asp Tyr Leu Glu Leu Pro His Arg Asn Gln
 195 200 205
 Arg Phe Asp His Leu Pro Pro Tyr Asp Tyr Tyr Ser Arg Ser Leu Trp
 210 215 220
 Asn Tyr Pro Arg Asn Thr Gln Ser Tyr Leu Ala Tyr Thr Gly Ile Arg
 225 230 235 240
 Ala Thr Ala Leu Leu Val Ala Met

245

<210>1154

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1154

Met Ala Val Gln Ser Ile Lys Glu Ala Val Thr Ser Ala Ala Thr Ser
 1 5 10 15
 Val Gly Cys Val Asn Cys Ser Arg Glu Ala Ile Pro Ala Phe Asn Thr
 20 25 30
 Glu Glu Arg Ala Thr Ser Ile Ala Arg Ser Val Ile Ala Ala Ile Ile
 35 40 45
 Ala Val Val Ala Ile Ser Leu Leu Gly Leu Gly Leu Val Val Leu Ala
 50 55 60
 Gly Cys Cys Pro Leu Gly Met Ala Ala Gly Ala Ile Thr Met Leu Leu
 65 70 75 80
 Gly Val Ala Leu Leu Ala Trp Ala Ile Leu Ile Thr Leu Arg Leu Leu
 85 90 95
 Asn Ile Pro Lys Ala Glu Ile Pro Ser Pro Gly Asn Asn Gly Glu Pro
 100 105 110
 Asn Glu Arg Asn Ser Ala Thr Pro Pro Leu Glu Gly Gly Val Ala Gly
 115 120 125
 Glu Ala Gly Arg Gly Gly Gly Ser Pro Leu Thr Gln Leu Asp Leu Asn
 130 135 140
 Ser Gly Ala Gly Ser
 145

<210>1155

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>1155

Met Gly Asn Ser Cys Phe Trp Arg Gly Gly Leu Leu Arg Tyr Pro Cys
 1 5 10 15
 Gly Glu Glu Ile Glu Lys Ser Arg Ala Asn Phe Phe Thr Ala Asp Thr
 20 25 30
 Thr Thr Val Met Ser Tyr Pro Pro Asn Pro Tyr Gly Leu Tyr Asp Met
 35 40 45
 Ala Gly Asn Val Tyr Glu Trp Cys Gln Asp Trp Tyr Gly Tyr Asp Phe
 50 55 60
 Tyr Glu Ile Ser Ala Gln Glu Pro Glu Ser Pro Gln Gly Pro Ala Gln
 65 70 75 80
 Gly Val Tyr Arg Val Leu Arg Gly Gly Cys Trp Lys Ser Leu Lys Asp
 85 90 95
 Asp Leu Arg Cys Ala His Arg His Arg Asn Asn Pro Gly Ala Val Asn
 100 105 110
 Ser Thr Tyr Gly Phe Arg Cys Ala Lys Asn Ile Asn
 115 120

<210>1156

<211>181

<212>PRT

<213>Chlamydia pneumoniae

<400>1156

Lys Leu Lys Leu Leu Lys Ala Ser Phe Ile Lys Leu Leu Leu Thr Leu
 1 5 10 15
 Asp Trp Pro Thr Glu Leu Leu Leu Lys Asn Arg Pro Phe Asp Phe Thr
 20 25 30
 Gly His Pro Glu Glu Glu Lys Leu Ile Lys Asp Ile Leu Leu Lys Glu
 35 40 45
 Glu Gly Asn Lys Tyr Phe Ser Leu Glu Ser Lys Lys Leu Leu Ala Arg
 50 55 60
 His Met Met His Asn Ile Val Val Leu Ser Glu Glu Pro Gly Arg Ser
 65 70 75 80
 Ala Phe Leu Gly Arg Thr Ala Phe Phe Pro Asn Lys Tyr Pro Ile Ala
 85 90 95

Gln Gly Gly Val Gly Ile Pro Ser Thr Ile Gly Asn Leu Phe Thr Ile
 100 105 110
 Trp Tyr Cys Phe Tyr Phe Tyr Arg Ala Ala Thr Pro Gln Ser Asp His
 115 120 125
 Pro Asp Gly Cys Gly Phe Ile Leu Leu Glu Arg Leu Lys Glu Leu Gly
 130 135 140
 Ala Gly Phe Phe Tyr Cys Asp Leu Arg Glu Ser Asn Thr Thr Gly Phe
 145 150 155 160
 Thr Leu Phe Phe Glu Gly Ser Asn Lys Gly Val Leu Lys Asn His Leu
 165 170 175
 Phe Ile Arg Asp Glu
 180

<210>1157

<211>131

<212>PRT

<213>Chlamydia pneumoniae

<400>1157

Met Asn Ile Tyr Gln Phe Ser Pro Gly Ala Ser Pro Asn Trp Gln Ala
 1 5 10 15
 Ser Leu Met Ala Gln Leu Asn Ser Tyr Phe Cys Leu Gly Gly Glu Thr
 20 25 30
 Val Thr Arg Ile Ile Ser Leu Arg Pro Ser Gly Leu Ile Leu Ala Lys
 35 40 45
 Lys Glu Lys Ala Val Val Ser Thr Ala Glu Lys Ile Leu Lys Ile Leu
 50 55 60
 Ser Phe Ile Leu Phe Pro Leu Val Leu Ile Ala Leu Ala Ile Arg Tyr
 65 70 75 80
 Leu Leu Tyr Asn Lys Phe Asn Lys Asp Leu Asp Arg Ala Val Phe Phe
 85 90 95
 Ile Pro Thr Glu Ile Thr Lys Ala Glu Leu Ile Ile Ala Lys Asn
 100 105 110
 Ser Cys Ala Ser Glu Arg Ser Gly Ser Asn Cys Phe Ser Ala Leu Leu
 115 120 125
 Phe Ser Ser
 130

<210>1158

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1158

Met Leu Gln His Leu Phe Ile Asp Gly Ile Thr Gln Glu Asn Pro Glu
 1 5 10 15
 Ala Leu Pro Asn Asn Thr Ser Gly Arg Leu Thr Leu Phe Pro Ser Val
 20 25 30
 Arg Tyr Ile Tyr Ser His Phe Thr Pro Gln Asn Pro Thr Ile Trp Pro
 35 40 45
 Gln Val Phe Phe Arg Gln Gly Pro Leu Asp Glu Asp Arg Gly Gly Gly
 50 55 60
 Phe Glu Ile Leu Glu Gln Leu Glu Leu Gly Val Arg Phe Pro Ile
 65 70 75 80
 Cys Pro Ser Gln Gly Pro Asp Asn Pro Asn Phe Gln Gly Phe Gln Gly
 85 90 95
 Ile Arg Ile Tyr Trp Glu Asp Ser Tyr Gln Pro Asn Lys Glu Val
 100 105 110

<210>1159

<211>111

<212>PRT

<213>Chlamydia pneumoniae

<400>1159

Met Ser Glu Ser Ile Asn Arg Ser Ile His Leu Glu Ala Ser Thr Pro
 1 5 10 15
 Phe Phe Ile Lys Leu Thr Asn Leu Cys Glu Ser Arg Leu Val Lys Ile
 20 25 30
 Thr Ser Leu Val Ile Ser Leu Leu Ala Leu Val Gly Ala Gly Val Thr

35 40
 Leu Val Val Leu Phe Val Ala Gly Ile Leu Pro Leu Leu Pro Val Leu
 50 55 60
 Ile Leu Glu Ile Ile Leu Ile Thr Val Leu Val Leu Leu Phe Cys Leu
 65 70 75 80
 Val Leu Glu Pro Tyr Leu Ile Glu Lys Pro Ser Lys Ile Lys Glu Leu
 85 90 95
 Pro Lys Val Asp Glu Leu Ser Val Val Glu Thr Asp Ser Thr Leu
 100 105 110

<210>1160

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1160

Leu Ala Phe Asn Glu Ser Val Arg Ile Tyr Arg Lys Leu Phe Asn Thr
 1 5 10 15
 Ala Glu Leu Lys Gln Met Tyr Gly Ala Gly Asp Tyr Glu Gln Gln Asn
 20 25 30
 Glu Asp Asn Leu Lys Ser Ile Leu Ser Phe Val Gln Ile Leu Asp Glu
 35 40 45
 Lys Asp Gly Phe Asp Asp Phe Leu Ala Thr His Lys Asp Thr Thr Phe
 50 55 60
 Ile Gly Arg Gly Gly Ala Asp Ile Phe Cys Ser
 65 70 75

<210>1161

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1161

Met Glu Glu Ala Leu Thr Phe Asp Asp Val Leu Leu Ile Pro Gln Tyr
 1 5 10 15
 Ser Glu Ile Leu Pro Ser Glu Val Ser Leu Lys Thr Ala Ile Ser Lys
 20 25 30
 Thr Leu Ser Leu Asn Ile Pro Ile Leu Ser Ala Ala Met Asp Ser Val
 35 40 45
 Thr Glu Thr Ala Met Ala Leu Ala Leu Ala Gln Glu Gly Gly Leu Gly
 50 55 60
 Ile Leu His Lys Asn Met Ser Glu Val Glu Gln Ser Ser Ser Val Arg
 65 70 75 80
 Lys Ile Lys Glu Ala Tyr Pro
 85

<210>1162

<211>91

<212>PRT

<213>Chlamydia pneumoniae

<400>1162

Met Asp Phe Ser Val Phe Pro Asp Arg Phe Val Glu Ser Thr Ser Pro
 1 5 10 15
 Ser Pro Ile Glu Asp Ile Asp Ala Lys Thr Leu Val Ser Asn Cys Cys
 20 25 30
 His Tyr Cys Ser Arg Cys Leu Phe Ile Phe Leu Ser Leu Leu Ser Ile
 35 40 45
 Ile Ile Cys Phe Ser Val Tyr Gly Thr Ser Gly Glu Thr Ala Ser Leu
 50 55 60
 Val Phe Gly Ile Leu Ser Leu Ile Val Leu Val Leu Leu Ile Ile Glu
 65 70 75 80
 Cys Arg Asn Arg Glu Cys Cys Arg Arg Ile Ser
 85 90

<210>1163

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1163

Leu Gln Ala Gly Arg Ser Gly Ile Ile Pro Gly Lys Lys Ala Ile Leu

1 5 10 15
 Leu Asn Val Asn Asp Ala Lys Thr Pro Asn Tyr Ser Cys Ile Phe Glu
 20 25 30
 Ser Ile Gly Phe Phe Asn Glu Gln Asp Leu Glu Ala Gln His Asn Gln
 35 40 45
 Gln Ala Ala Leu Val Arg Lys Ile Leu Lys Val Val Pro His His Phe
 50 55 60
 Leu Lys Gly Leu Ile Ala Lys Leu Pro Arg Ser Leu Lys Lys Asp Arg
 65 70 75 80
 Lys Phe Met Ser Ser Leu Ile Phe Thr Lys Leu Ser Tyr Cys Phe
 85 90 95

<210>1164

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1164

Met Met Lys Ile Lys Lys Ala Ile Ser Arg His Ile Asp Arg Tyr Leu
 1 5 10 15
 Ser Pro Met Lys Ile Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser
 20 25 30
 Pro Ser Thr Leu Ser Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu
 35 40 45
 Leu Ser Ser His Gly Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser
 50 55 60
 Ser Lys Thr Ser Thr Gly Lys Arg Ala Lys Ala Glu Asn Leu Cys Arg
 65 70 75 80
 Lys Glu Phe Pro Leu Phe Leu Met Ile Ser Cys Ile Lys Ile Lys
 85 90 95

<210>1165

<211>238

<212>PRT

<213>Chlamydia pneumoniae

<400>1165

Met Glu Asn Leu Ser Ser Ala Pro Ser Arg Ser Ile Trp Lys Ser Ile
 1 5 10 15
 Ile Gln Asn Lys Met Leu Val Leu Gly Leu Thr Thr Leu Ile Ile Leu
 20 25 30
 Met Leu Gly Ala Leu Leu Leu Pro Trp Phe Tyr Gln Asp Tyr Glu Gln
 35 40 45
 Thr Ser Leu Lys Asp Ile Leu Val Ser Pro Cys Ser Arg Phe Pro Phe
 50 55 60
 Gly Thr Asp Thr Leu Gly Arg Cys Met Phe Ala Arg Thr Leu Arg Gly
 65 70 75 80
 Leu Arg Leu Ser Leu Leu Ile Ala Thr Ile Ala Thr Leu Ile Asp Val
 85 90 95
 Cys Val Gly Leu Leu Trp Ala Thr Val Ala Ile Ser Gly Gly Lys Lys
 100 105 110
 Ile Asp Phe Leu Met Met Arg Thr Glu Ile Leu Phe Ser Leu Pro
 115 120 125
 Arg Ile Pro Ile Ile Ile Leu Leu Val Ile Phe His His Gly Leu
 130 135 140
 Leu Pro Leu Ile Leu Ala Met Thr Ile Thr Gly Trp Ile Pro Ile Ser
 145 150 155 160
 Arg Ile Ile Tyr Gly Gln Phe Leu Leu Leu Lys Asn Lys Pro Phe Val
 165 170 175
 Leu Ser Ala Lys Ala Met His Ala Ser Thr Phe His Ile Leu Lys Lys
 180 185 190
 His Leu Leu Pro Asn Thr Leu Ala Pro Ile Ile Ser Thr Leu Ile Phe
 195 200 205
 Thr Ile Pro Asn Ala Ile Tyr Thr Glu Ala Phe Ile Ser Phe Leu Gly
 210 215 220
 Leu Gly Ile Gln Pro Pro Gln Ala Lys Pro Arg His Leu Ser
 225 230 235
 <210>1166

<211>211

<212>PRT

<213>Chlamydia pneumoniae

<400>1166

```

Met Gly Pro Leu Lys Lys Glu Glu Lys Thr Ile Leu Met Ile Phe Phe
 1           5           10           15
Leu Leu Val Val Leu Trp Thr Phe Gly Asp Leu Leu Gly Ile Ser Ala
           20           25           30
Thr Thr Ala Ala Leu Ile Gly Leu Ser Leu Leu Ile Leu Thr Asn Ile
           35           40           45
Leu Asp Trp Gln Lys Asp Val Ile Ala Asn Thr Thr Ala Trp Glu Thr
           50           55           60
Phe Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ser Phe Leu Asn Gln
           65           70           75           80
Leu Gly Phe Ile Pro Leu Val Gly Asp Ser Ala Ala Ala Leu Val Ser
           85           90           95
Gly Leu Ser Trp Lys Ile Gly Phe Pro Leu Leu Phe Leu Ile Tyr Phe
           100          105          110
Tyr Ser His Tyr Leu Phe Ala Ser Asn Thr Ala His Ile Gly Ala Met
           115          120          125
Tyr Pro Ile Phe Leu Ala Val Ser Ile Ser Leu Gly Thr Asn Pro Ile
           130          135          140
Phe Ala Ala Leu Thr Leu Ala Phe Ala Ser Asn Leu Phe Gly Gly Leu
           145          150          155          160
Thr His Tyr Gly Ser Gly Pro Ala Pro Leu Tyr Phe Gly Ser His Leu
           165          170          175
Val Thr Val Gln Glu Trp Trp Arg Ser Gly Phe Ala Leu Ser Ile Val
           180          185          190
Asn Ile Val Ile Trp Ile Gly Ile Gly Ser Leu Trp Trp Lys Ala Leu
           195          200          205
Gly Leu Ile
           210

```

<210>1167

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1167

```

Leu Lys Met Glu Thr Tyr Ser Phe Ser Thr Glu Leu Gln Lys Asn Thr
 1           5           10           15
Ser Leu Tyr Ile Met Glu Lys Leu Asp Ser Tyr Phe Ser Phe Gln Gly
           20           25           30
Lys Arg Thr Arg Val Ile Ala Ile Thr Pro Ala Gly Leu Ala Ile Ala
           35           40           45
Tyr Glu Gln Asn Ile His Leu Ser Met Thr Val Lys Ile Leu Lys Val
           50           55           60
Leu Ser Phe Pro Arg Ser Leu Leu Arg Thr Thr Ser Leu Trp Tyr Arg
           65           70           75           80
Pro

```

<210>1168

<211>228

<212>PRT

<213>Chlamydia pneumoniae

<400>1168

```

Leu Lys Gly Phe Leu Ser Val Asn Glu Leu Ile Phe Gly Phe Gln Thr
 1           5           10           15
Phe Ser Val Val Leu Gly Val Phe Ala Ser Arg Gly Lys Ala
           20           25           30
Trp Leu Thr Gly Trp Leu Ser Leu Leu Ser Ser Ile Met Asn Val Phe
           35           40           45
Val Leu Lys Gln Ile His Leu Trp Gly Phe Glu Val Thr Ser Ala Asp
           50           55           60
Val Tyr Val Ile Gly Leu Leu Thr Cys Leu Asn Tyr Ala Arg Glu His
           65           70           75           80

```

Tyr Glu Lys Asn Asp Ile Asn Asp Ala Met Leu Cys Ser Val Ile
 85 90 95
 Ser Ile Ala Phe Leu Val Leu Thr Gln Leu His Leu Phe Leu Ile Pro
 100 105 110
 Ser Pro Asn Asp Ser Ser Gln Glu His Phe Leu Ala Leu Phe Ser Ser
 115 120 125
 Thr Pro Arg Ile Val Val Ala Ser Leu Val Thr Leu Ile Phe Val Gln
 130 135 140
 Ile Val Asp Ile Lys Leu Phe Thr Phe Leu Gln Arg Val Phe Ser Lys
 145 150 155 160
 Lys Tyr Phe Ala Met Arg Ser Thr Ile Ser Leu Leu Phe Ser Gln Leu
 165 170 175
 Ile Asp Thr Ile Ile Phe Ser Phe Leu Gly Leu Tyr Gly Leu Val Ser
 180 185 190
 Asn Leu Cys Asp Val Met Ile Phe Ala Met Leu Val Lys Gly Ile Val
 195 200 205
 Ile Thr Leu Ala Ile Pro Thr Leu Thr Val Thr Lys Ala Val Leu Asp
 210 215 220
 Arg Arg Ser Ser
 225

<210>1169

<211>189

<212>PRT

<213>Chlamydia pneumoniae

<400>1169

Leu Gly Ile Phe Cys Phe Lys Lys Ile Asn Leu Phe Lys Thr Phe Ile
 1 5 10 15
 Leu Met Asn Asn Asn Val Tyr Leu Phe Cys Phe Leu Ile Phe Leu Ser
 20 25 30
 Lys Lys Val Phe Phe Glu Ser Tyr Glu Asp Phe Ala Asn Val Ala Ser
 35 40 45
 Ser Trp Pro Lys Ser Leu Arg Ala Leu Val Gln Gly Arg Tyr Phe Val
 50 55 60
 Asp Ser Glu Leu Lys Glu Thr Pro Tyr Arg Ile His Asp Phe Lys Lys
 65 70 75 80
 Thr Pro Ile His His Arg Leu Tyr Arg Ser Leu Pro Ile Ile Ser Thr
 85 90 95
 Ile Gly Gly Ile Ile Arg Leu Ile Glu Ala His Ser Gly Pro Ile His
 100 105 110
 Pro Arg Asp Lys Met Lys Tyr Arg Phe Glu Val Leu Gln Ala Val Ile
 115 120 125
 Glu Ile Leu Gly Leu Gly Val Leu Ile Leu Val Phe Asp Ile Ile Gly
 130 135 140
 Cys Phe Leu Ala Phe Leu Val Ala Ile Ile Leu Ser Leu Leu Leu Tyr
 145 150 155 160
 Cys Asn Ser Thr Phe Thr Cys Val Gln Asn Leu Ser Phe Thr Glu Arg
 165 170 175
 Met Leu Glu Gly Ile Gly Glu Ala Val Asn Phe Leu Ala
 180 185

<210>1170

<211>92

<212>PRT

<213>Chlamydia pneumoniae

<400>1170

Val Gly Leu Ser Tyr Trp Asp Ser Gly Phe Val Val Leu Ala Cys Lys
 1 5 10 15
 Val Leu Ala Thr Ala Leu Lys Phe Leu Phe Ser Lys Ala Ser Ser Lys
 20 25 30
 Ile Lys Gln Met Lys Trp Arg Glu Lys Ala Arg Asn Leu Ala Ala Lys
 35 40 45
 Asp Thr Val Gln Ser Ile Lys Glu Phe Cys Ser Val Asp Leu Thr Ser
 50 55 60
 Cys Phe Thr Arg Cys Phe Arg Leu Arg Asn Arg Val Val Glu Glu Gly
 65 70 75 80

Ala Ser Glu Asn Gln Thr Val Arg Glu Ile Ile Val
85 90

<210>1171

<211>130

<212>PRT

<213>Chlamydia pneumoniae

<400>1171

Met Val Asn Arg Tyr Lys Ser Ser Ala Glu Phe Ser Ala Asp His Tyr
1 5 10 15
Tyr Asp Asp Asn Leu Val Arg Met Gly Tyr Lys Arg Asn Leu Arg Gly
20 25 30
Leu Ala Pro Val Glu Asn Glu Val Cys Leu Phe Glu Glu Asn Asn Leu
35 40 45
Leu Glu Ser Val Met Ala Ser Ile Pro Ile Met Gly Ser Ile Leu Gly
50 55 60
Leu Gly Arg Leu His Ser Val Trp Ser Thr Gln Asp Pro Lys Asp Ser
65 70 75 80
Lys Ile Ser Ile Ile Phe His Thr Ala Leu Gly Ile Leu Glu Thr Leu
85 90 95
Gly Leu Gly Ile Ile Val Leu Leu Ile Lys Ile Thr Ile Thr Ile Leu
100 105 110
Leu Ile Leu Phe Thr Pro Cys Leu Leu Cys Tyr Phe Met Tyr Ser Cys
115 120 125

Cys Leu

130

<210>1172

<211>125

<212>PRT

<213>Chlamydia pneumoniae

<400>1172

Met Thr Lys Asn Ala Ile Asn Ser Gln Thr Thr Thr Pro Gln Pro Asn
1 5 10 15
Leu Thr Asp Ala Glu Pro Ile Ala Ser Arg Ala Gln Cys Lys Ser Ile
20 25 30
Ala Val Ile Ile Ser Leu Phe Ala Leu Gly Met Leu Leu Leu Cys Leu
35 40 45
Gly Ile Ile Leu Ile Ser Ile Pro Ile Pro Gly Leu Ala Ala Gln Val
50 55 60
Ala Leu Gly Leu Gly Ile Val Ser Leu Ile Leu Gly Ile Ala Leu Ala
65 70 75 80
Asn Ile Gly Phe Leu Cys Leu Leu Leu Arg Cys Lys Gln Phe Pro Lys
85 90 95
Asn Pro Ile His Cys Pro Leu Lys Ala Leu Asn Ser Leu Pro Arg Glu
100 105 110
Ala Leu Pro Pro His Ser His Gly Lys Leu Glu Asn Phe
115 120 125

<210>1173

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1173

Leu Lys Glu Ile Met Met Ile Asn Phe Ile Arg Ser Tyr Ala Leu Tyr
1 5 10 15
Phe Ala Trp Ala Ile Ser Cys Ala Gly Thr Leu Ile Ser Ile Phe Tyr
20 25 30
Ser Tyr Ile Leu Asn Val Glu Pro Cys Ile Leu Cys Tyr Tyr Gln Arg
35 40 45
Ile Cys Leu Phe Pro Leu Thr Val Ile Leu Gly Ile Ser Ala Tyr Arg
50 55 60
Glu Asp Ser Ser Ile Lys Leu Tyr Ile Leu Pro Gln Ala Val Leu Gly
65 70 75 80
Leu Gly Ile Ser Ile Tyr Gln Val Phe Leu Gln Glu Ile Pro Gly Met
85 90 95
Gln Leu Asp Ile Cys Gly Arg Val Ser Cys Ser Thr Lys Ile Phe Leu

100 105
 Phe Ser Tyr Val Thr Ile Pro Met Ala Ser Val Val Ala Phe Gly Ala
 115 120 125
 Ile Val Cys Leu Leu Val Leu Thr Lys Asn Tyr Arg Gly
 130 135 140
 <210>1174
 <211>146
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1174
 Leu Xaa Ile Glu Gln Glu Asn Phe Ser Phe Lys Phe Lys Lys Ser Ala
 1 5 10 15
 Leu Ser Phe Thr Tyr Asn Thr Ala Asn Leu Thr Lys Ser Thr Phe Thr
 20 25 30
 Phe Ile Leu Leu Leu Leu Leu Arg Lys Lys Asp Gln Gly Leu Arg Phe
 35 40 45
 Met Asp Lys Glu Thr Leu Glu Asn Ile Tyr Arg His Phe Arg Tyr Arg
 50 55 60
 Phe Leu Lys Leu Asn Ile Leu Pro Ala Phe Leu Gly Leu Leu Leu Leu
 65 70 75 80
 Cys Ser Pro Asn Thr Leu Asn Tyr Thr Gln Val Asp Val Ile Phe Ser
 85 90 95
 Asp Arg Leu Cys Ser Cys Leu Leu Ile Phe Leu Ala Ile Ala Ser Leu
 100 105 110
 Thr Lys Arg Ser Leu Leu Trp Leu Gly Ala Pro Leu Gly Ile Trp Val
 115 120 125
 Thr Leu Phe Ala Cys Val Ala Asp Asp Leu Leu Leu Phe Leu Gln Met
 130 135 140
 Ile Leu
 145

<210>1175

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1175

Leu Leu Val Phe Val Lys Val Asn Ser Ser Met Gly Leu Pro Thr Phe
 1 5 10 15
 Pro Xaa Xaa Phe Leu Asn Ile Cys Cys Trp Phe Ile Ile Val Leu Phe
 20 25 30
 Ile Leu Ala Phe Ala Glu Ser Leu Arg His Leu Arg Trp Met Asn Leu
 35 40 45
 Ile Phe Ser Ala Ala Ile Leu Phe Ser Pro Val Leu Phe His Ile Pro
 50 55 60
 Val Glu Ser Pro Met Phe Leu Pro Ile Ile Val Thr Gly Leu Ile Leu
 65 70 75 80
 Ile Ile Leu Ser Ile Gly Lys Arg Arg Arg Thr Lys Arg Lys Leu
 85 90 95

<210>1176

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1176

Leu Val Tyr Phe Met Val Phe Ser Pro Ser Ser Glu Ser Val Val Lys
 1 5 10 15
 Ala Asn Ser Val Val Arg Ser Asn Phe Cys Tyr Phe Leu Glu Asn Lys
 20 25 30
 Phe Val Ser Pro Ser Glu Ser Thr Glu Val Met Phe Ser Glu Ile Met
 35 40 45
 Lys Gly Arg Val Pro Asp Ile Glu Ser Leu Phe Asp Arg Pro Thr Asp
 50 55 60
 Met Met Met Thr Gly Phe Lys Xaa Arg Arg Ile Trp Gly Ile Cys Ser
 65 70 75 80
 Ile Ala Ser Glu Tyr
 85

<210>1177

<211>114

<212>PRT

<213>Chlamydia pneumoniae

<400>1177

Met Leu Tyr Pro Val Ile Ala Val Val Cys Ala Val Val Ser Val Val
 1 5 10 15
 Leu Leu Ile Leu Lys Val Leu Phe Leu Leu Leu Ser Phe Pro Phe Lys
 20 25 30
 Leu Cys Ser Ala Ser Ser Ala Leu Pro Gly Glu Arg Val Ser Leu Gly
 35 40 45
 Ser His Phe Lys Cys Leu Tyr Gly Gly Gly Leu Pro Tyr Leu Leu Ala
 50 55 60
 Cys Leu Leu Ile Val Pro Val Ile Gly Thr Ala Ile His Gly Phe Ile
 65 70 75 80
 Ile Ser His Arg Thr Ser Glu Asp Ala Arg Leu Ser Ser Ala Ile Val
 85 90 95
 Phe Met Gln Ala Pro Ile Leu Gln Leu Ala Gly Met Ser Gly Leu Ile
 100 105 110
 Lys Pro

<210>1178

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1178

Leu Phe Phe Tyr Ile Tyr Ser Ile Leu Lys Arg Tyr Ile Val Val Leu
 1 5 10 15
 Gly Lys Ile Leu Gly Leu Ile Thr Ile Gln Phe Tyr Gln Asn Leu Gly
 20 25 30
 Gly Met Ser Ser Glu Arg Tyr Ser Ala Leu His Ser Arg Lys Ser Leu
 35 40 45
 Ser Val Leu Pro His Val Val Arg Lys Val Leu Leu Ser Phe Pro Asp
 50 55 60
 Phe Arg Gly Asn Gly Asp Val Asn Leu Arg Asn Ile Arg Ser Asp
 65 70 75

<210>1179

<211>163

<212>PRT

<213>Chlamydia pneumoniae

<400>1179

Leu Lys Ala Lys Ala Tyr Leu Asp Lys Gly Ala Phe Val Pro Ser Asp
 1 5 10 15
 Phe Val Trp Glu Ile Leu Lys Glu Lys Leu Gln Ser Gln Ala Cys Ser
 20 25 30
 Lys Gly Cys Ile Ile Asp Gly Phe Pro Arg Thr Leu Asp Gln Ala His
 35 40 45
 Leu Leu Asp Ser Phe Leu Met Asp Val His Ser Asn Tyr Thr Val Ile
 50 55 60
 Phe Leu Glu Ile Ser Glu Asp Glu Ile Leu Lys Arg Val Cys Ser Arg
 65 70 75 80
 Phe Leu Cys Pro Ser Cys Ser Arg Ile Tyr Asn Thr Ser Gln Gly His
 85 90 95
 Thr Glu Cys Pro Asp Cys His Val Pro Leu Ile Arg Arg Ser Asp Asp
 100 105 110
 Thr Pro Glu Ile Ile Lys Glu Arg Leu Thr Lys Tyr Gln Glu Arg Thr
 115 120 125
 Ala Pro Val Ile Ala Tyr Tyr Asp Ser Leu Gly Lys Leu Cys Arg Val
 130 135 140
 Ser Ser Glu Asn Lys Glu Asp Leu Val Phe Glu Asp Ile Leu Lys Cys
 145 150 155 160
 Ile Tyr Lys

<210>1180

<211>128

<212>PRT

<213>Chlamydia pneumoniae

<400>1180

```

Met Ser Gln Cys Gln Ser Ser Ser Thr Ser Thr Trp Glu Trp Met Lys
 1          5          10          15
Ser Phe Val Pro Asn Trp Lys Asn Pro Thr Pro Pro Leu Ser Pro Ile
          20          25          30
Pro Ser Glu Asp Glu Phe Ile Leu Ala Tyr Glu Pro Phe Val Leu Pro
          35          40          45
Lys Thr Asp Pro Glu Asn Ala Gln Ala Asn Pro Pro Gly Thr Ser Thr
          50          55          60
Pro Asn Val Glu Asn Gly Ile Asp Asp Leu Asn Pro Leu Leu Gly Gln
          65          70          75          80
Pro Asn Glu Gln Asn Asn Ala Asn Asn Pro Gly Thr Ser Gly Ser Asn
          85          90          95
Pro Thr Ser Leu Pro Ala Pro Glu Arg Leu Pro Glu Thr Glu Glu Asn
          100          105          110
Ser Gln Glu Glu Glu Gln Gly Ser Gln Asn Asn Glu Asp Leu Ile Gly
          115          120          125

```

<210>1181

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1181

```

Leu Lys Ser Met Leu Asp Pro Lys Lys His Ser Thr Leu Gly Ile Glu
 1          5          10          15
Ile Ser Ser Glu Thr Ala Glu Thr Ile Glu Ser Cys Ser Leu Gly Leu
          20          25          30
Ile Ser Ile Asn Leu Leu Leu Ser Gly Leu Cys Leu Arg Ser Ser His
          35          40          45
Asp Arg Ser Gln Ala Val Lys Ile Ile Gln Gln Phe Cys Pro Gln Phe
          50          55          60
Ser Ser Glu Glu Val Gln Asn Phe Val Glu Gln Arg Asn Ile Leu Leu
          65          70          75          80
His Phe Tyr Ile Ile Cys Leu Lys Gly Thr Lys Ser Pro Cys
          85          90

```

<210>1182

<211>314

<212>PRT

<213>Chlamydia pneumoniae

<400>1182

```

Met Asn Lys Lys His Ala Ser Phe Ser Ser Arg Leu Gly Phe Ile Phe
 1          5          10          15
Ser Met Ile Gly Ile Ala Val Gly Ala Gly Asn Ile Trp Arg Phe Pro
          20          25          30
Arg Val Ala Ala Gln Asn Gly Gly Gly Ala Phe Leu Ile Leu Trp Leu
          35          40          45
Cys Phe Leu Phe Leu Trp Ser Ile Pro Leu Ile Ile Glu Leu Ser
          50          55          60
Ile Gly Lys Leu Thr Lys Lys Ala Pro Ile Gly Ala Leu Ile Lys Thr
          65          70          75          80
Ala Gly Lys Lys Phe Ala Trp Ala Gly Gly Phe Ile Thr Leu Val Thr
          85          90          95
Thr Cys Ile Leu Ala Tyr Tyr Ser Thr Ile Val Gly Trp Gly Leu Ser
          100          105          110
Tyr Phe Tyr Tyr Ala Val Ser Gly Lys Ile His Leu Gly Asn Asp Phe
          115          120          125
Ala Lys Leu Trp Thr Ser His Tyr Gln Ser Ser Ile Pro Leu Trp Ala
          130          135          140
His Leu Thr Ser Leu Gly Leu Ala Tyr Leu Val Ile Arg Lys Gly Ile
          145          150          155          160
Val His Gly Ile Glu Lys Cys Asn Lys Ile Leu Ile Pro Ala Phe Phe
          165          170          175

```

Leu Cys Thr Ile Ala Leu Leu Leu Arg Ala Val Thr Leu Pro Gly Ala
 180 185 190
 Val Gln Gly Ile Lys Gln Leu Phe Ser Cys Asp Lys Ser Cys Phe Ser
 195 200 205
 Asn Tyr Lys Val Trp Ile Glu Ala Leu Thr Gln Asn Ala Trp Asp Thr
 210 215 220
 Gly Ala Gly Trp Gly Leu Leu Leu Val Tyr Ala Gly Phe Ala Ser Lys
 225 230 235 240
 Lys Thr Gly Val Val Ser Asn Gly Ala Leu Thr Ala Ile Cys Asn Asn
 245 250 255
 Leu Val Ser Leu Ile Met Gly Asp His Tyr Leu Phe His Met Cys Phe
 260 265 270
 Phe Arg His Phe Arg Asn His Ala Ala Thr Arg Trp Ser Arg Ser Xaa
 275 280 285
 Lys His Arg Asp Tyr Leu Tyr Leu Pro Thr Arg Val Ile Tyr Pro Phe
 290 295 300
 Ala Trp Arg Asn Leu Ser Asn His Pro Val
 305 310

<210>1183

<211>132

<212>PRT

<213>Chlamydia pneumoniae

<400>1183

Met Arg Ala Glu Met Ala Val Ile Tyr Trp Asp Arg Ser Lys Ile Val
 1 5 10 15
 Trp Ser Phe Glu Pro Trp Ser Leu Arg Leu Thr Trp Tyr Gly Val Phe
 20 25 30
 Phe Thr Val Gly Ile Phe Leu Ala Cys Leu Ser Ala Arg Tyr Leu Ala
 35 40 45
 Leu Ser Tyr Tyr Gly Leu Lys Asp His Leu Ser Phe Ser Lys Ser Gln
 50 55 60
 Leu Arg Val Ala Leu Glu Asn Phe Phe Ile Tyr Ser Ile Leu Phe Ile
 65 70 75 80
 Val Pro Gly Ala Arg Leu Ala Tyr Val Ile Phe Tyr Gly Trp Ser Phe
 85 90 95
 Tyr Leu Gln His Pro Glu Glu Ile Ile Gln Ile Trp His Gly Gly Leu
 100 105 110
 Ser Ser His Gly Gly Val Leu Trp Leu Ser Phe Val Gly Gly His Phe
 115 120 125
 Phe Leu Asp Ile
 130

<210>1184

<211>171

<212>PRT

<213>Chlamydia pneumoniae

<400>1184

Met Ser Val His Ile Thr Pro Arg Lys Cys Phe Ile Leu Cys Ile Leu
 1 5 10 15
 Ser Met Phe Thr Leu Pro Thr Leu Phe Pro Lys Ala His Leu Ile Leu
 20 25 30
 Phe Ser Pro Tyr Ile Val Leu Cys Phe Tyr Cys Phe Ser Lys Asp Lys
 35 40 45
 Gly Leu Val Leu Ala Leu Gly Cys Gly Val Leu Ser Asp Leu Ala Leu
 50 55 60
 Gly Ser Arg Gly Val Phe Leu Leu Leu Tyr Pro Leu Thr Ala Leu Ile
 65 70 75 80
 Thr His Lys Ala His Leu Ile Phe Ser Lys Glu Ser Lys Ala Ala Leu
 85 90 95
 Val Ile Val Asn Met Ile Phe Tyr Gly Val Phe Leu Leu Leu Thr Ile
 100 105 110
 Pro Met Cys Ala Leu Phe Gly His Glu Val Arg Trp Ser Ile Asp Val
 115 120 125
 Leu Met Ile Pro Leu Lys Cys Ser Phe Leu Asp Asn Leu Ile Phe Thr
 130 135 140

Ser Val Ile Tyr Ile Leu Pro Cys Ala Ile Asn Ser Gly Ile His Lys
 145 150 155 160
 Met Ile Ser Phe Phe Arg Arg Leu Val Cys Tyr
 165 170

<210>1185

<211>205

<212>PRT

<213>Chlamydia pneumoniae

<400>1185

Met Phe Met Lys Ile Cys Ser Leu Lys Leu Lys Asn Phe Arg Asn His
 1 5 10 15
 Ser Asp Leu Glu Ile Ser Leu Ala Pro Lys Leu Asn Tyr Ala Gln Gly
 20 25 30
 Lys Thr Asn Leu Leu Glu Ala Leu Tyr Val Leu Ser Leu Gly Arg Ser
 35 40 45
 Phe Arg Thr Gln His Leu Thr Asp Thr Ile Thr Phe Gly Ser Ser His
 50 55 60
 Phe Phe Leu Glu Thr Gln Phe Glu Lys Asp His Leu Pro Gln Ala Leu
 65 70 75 80
 Ser Ile Tyr Thr Asp Lys Gln Gly Lys Lys Ile Cys Tyr Asn Gln Leu
 85 90 95
 Pro Ile Lys Thr Leu Ser Gln Leu Ile Gly Lys Val Pro Ile Val Leu
 100 105 110
 Phe Ser Ser Lys Asp Arg Leu Leu Ile Ser Gly Ala Pro Ala Asp Arg
 115 120 125
 Arg Leu Phe Leu Asn Leu Leu Leu Ser Gln Cys Asp Asn His Tyr Thr
 130 135 140
 Leu Cys Leu Ser Tyr Tyr His Arg Ala Leu Gln Gln Arg Asn Ala Leu
 145 150 155 160
 Leu Lys Ser Lys Gln Thr Ser Thr Val Ala Ser Gly Met Asn Ser Trp
 165 170 175
 Ser Asn Thr Ala Pro Thr Tyr Pro Ser Asn Gly Phe Ser Val Val Arg
 180 185 190
 Asn Phe Gln Ile Tyr Pro Lys Asn Phe Gly Leu Thr Thr
 195 200 205

<210>1186

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1186

Leu Arg Phe Arg Asn Ile Lys Lys Ser Leu Ile Phe Ile Lys Arg Ile
 1 5 10 15
 Arg Tyr Ser Gln Ser Gly Lys Glu Gln Lys Gly Ala Arg Pro Phe Phe
 20 25 30
 Lys Lys Ser Ile Thr Ser Ser Leu Val Ile Leu Leu Leu Glu Ala Ile
 35 40 45
 Phe Asn Glu Asn Phe Ser Ser Ile Ile Gln Asn Asn Phe Asn Lys Asn
 50 55 60
 Phe Lys Asn Lys Asn Ile Ser Ile Asn Arg Ile Phe Val Lys Phe Thr
 65 70 75 80
 Ile

<210>1187

<211>79

<212>PRT

<213>Chlamydia pneumoniae

<400>1187

Val Gln Leu Phe Gln Tyr Met Asn Glu Ser Gly Trp Asp Trp Leu Cys
 1 5 10 15
 Asp Phe Asp Ser Gln Gly Glu Gly Phe Gln Leu Ser Arg Leu Val Gly
 20 25 30
 Leu Leu His Ser Ser Trp Ala Leu Tyr Glu Ala Lys Glu Gln Phe Tyr
 35 40 45
 Leu Pro Glu Val Ser Leu Leu Thr Trp Glu Glu Leu Ile Glu Met Gln

50 55 60
 Phe Val Lys Gln Thr Asn Lys Thr Arg Gly Cys Lys Arg Ser Leu
 65 70 75
 <210>1188
 <211>119
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1188
 Met Pro Val Ser Ser Ala Pro Leu Pro Thr Ser His Arg Pro Ser Ser
 1 5 10 15
 Gly Asn Leu Gly Leu Met Glu Pro Asn Ser Lys Ala Leu Lys Ala Lys
 20 25 30
 His Gln Asp Lys Thr Thr Lys Thr Ile Lys Leu Leu Val Lys Ile Leu
 35 40 45
 Val Ala Ile Leu Val Ile Glu Val Leu Gly Ile Ile Ala Ala Phe Phe
 50 55 60
 Ile Pro Gly Thr Pro Pro Ile Cys Leu Ile Ile Leu Gly Gly Leu Ile
 65 70 75 80
 Leu Thr Thr Val Leu Cys Val Leu Leu Leu Val Ile Lys Leu Ala Leu
 85 90 95
 Val Asn Lys Thr Glu Gly Thr Thr Ala Glu Gln Gln Ile Lys Arg Lys
 100 105 110
 Leu Ser Ser Lys Ser Ile Ser
 115

<210>1189
 <211>105
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1189
 Met Ser Ser Pro Val Val Thr Gly Thr Ser Ser Ala Ser Pro Val Glu
 1 5 10 15
 Gln Thr Lys Leu Gly Glu Phe Leu Glu Arg Leu Ser Gly Ser Gly Arg
 20 25 30
 Cys Ile Lys Ile Ala Phe Ala Ala Ser Thr Ala Leu Leu Leu Asn
 35 40 45
 Thr Phe Val Ser Gly Ile Val Ala Ile Ala Met Ile Phe Val Ala Thr
 50 55 60
 Ser Val Gly Ala Tyr Phe Thr Val Ile Gly Pro Leu Phe Leu Leu Ser
 65 70 75 80
 Leu Ile Leu Leu Ala Ile Met Leu Ile Ser Met Tyr Lys Ile Thr His
 85 90 95
 Pro Ser Gln Asn Thr Pro Ile Ser Asn
 100 105

<210>1190
 <211>162
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1190
 Met Leu Cys Thr Cys Ser Arg Ile Gln Asp Gly Asn Pro Trp Met Lys
 1 5 10 15
 Ser Glu Arg Leu Lys Lys Leu Glu Ser Glu Leu His Asp Leu Thr Gln
 20 25 30
 Trp Met Gln Leu Gly Leu Val Pro Lys Lys Glu Ile Ser Arg His Gln
 35 40 45
 Glu Glu Ile Arg Ile Leu Glu His Lys Ile Tyr Glu Glu Lys Glu Arg
 50 55 60
 Leu Gln Leu Leu Lys Glu Asn Gly Glu Ile Glu Glu Tyr Val Thr Pro
 65 70 75 80
 Arg Arg Ser Pro Ala Lys Thr Val Tyr Pro Asp Gly Pro Ser Met Ser
 85 90 95
 Asp Ile Glu Phe Val Glu Pro Thr Glu Thr Glu Ile Asp Ile Asp Pro
 100 105 110
 Gly Glu Thr Val Glu Leu Glu Leu Thr Asp Glu Gly Arg Glu Asp Gly
 115 120 125

Ala Val Glu Val Asp Tyr Ser His Glu Asp Asp Glu Asp Phe Ser
 130 135 140
 Asp Arg Asn Arg Trp Arg Arg Gly Gly Ile Ile Asp Pro Asp Ala Asn
 145 150 155 160
 Glu Trp

<210>1191

<211>83

<212>PRT

<213>Chlamydia pneumoniae

<400>1191

Leu Val Ile Gln Ile Gly Val Leu Pro Pro Leu Val Ala Thr Lys Lys
 1 5 10 15
 Ile Asp Ile Asn Arg Phe Met Gln Asp Ala Asp Asn Trp Ile Pro Met
 20 25 30
 Phe Ser His Pro Phe Phe Leu Arg Glu Lys Thr Leu Ser Asp Gly Lys
 35 40 45
 Asp Ile His Ile Leu Ser Arg Leu Lys Gly Leu Gln Thr Cys Ala Pro
 50 55 60
 Cys Ser Pro His Glu Glu Arg Thr Ile Thr Leu Leu Ser His Ser Asn
 65 70 75 80
 Ser Val Ser

<210>1192

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1192

Met Asn Lys Ser Arg Phe Leu Arg Leu Cys Cys Cys Leu Cys Phe Cys
 1 5 10 15
 Gly Ser Leu Phe Tyr Phe Tyr Ile Asn Lys Gln Asn Ser Leu Thr Lys
 20 25 30
 Leu Arg Leu Glu Ile Pro Cys Leu Ser Val Arg Leu Arg Gln Leu Glu
 35 40 45
 Gln Gln Asn Ile Ser Leu Arg Phe Leu Ile Asp Lys Ile Glu Arg Pro
 50 55 60
 Asp His Leu Met Glu Ile Ala Ala Leu Pro Glu Tyr Gln Tyr Leu Glu
 65 70 75 80
 Tyr Pro Ser Glu Glu Ser Ile Ser Leu Leu Ser Tyr Glu Leu Pro
 85 90 95

<210>1193

<211>101

<212>PRT

<213>Chlamydia pneumoniae

<400>1193

Met Asp Pro Ala Ser Pro Val Ala Pro His Val Leu Gln Asp His Val
 1 5 10 15
 Gln Leu Ser Ser Glu Glu Leu Ser Ala Leu Ser Ser Gly Val Ser Arg
 20 25 30
 Val Lys Lys Leu Thr Ile Ala Ile Met Val Leu Ser Leu Ile Ala Ile
 35 40 45
 Ser Leu Val Ala Cys Gly Leu Phe Leu Thr Gly Ser Ala Pro Leu Gln
 50 55 60
 Leu Ser Ile Trp Ile Ala Ala Ser Cys Ile Thr Leu Ser Met Leu Val
 65 70 75 80
 Cys Ala Cys Trp Arg Tyr Lys Ile Ser Asn Ala Leu Glu Lys Thr Lys
 85 90 95
 Val Ala His Glu Ser
 100

<210>1194

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1194

Val Met Trp Tyr Ser Asp Tyr His Val Trp Ile Leu Pro Val His Glu
 1 5 10 15
 Arg Val Val Arg Leu Gly Leu Thr Glu Lys Met Gln Lys Asn Leu Gly
 20 25 30
 Ala Ile Leu His Val Asp Leu Pro Ser Val Gly Ser Leu Cys Lys Glu
 35 40 45
 Gly Glu Val Leu Val Ile Leu Glu Ser Ser Lys Ser Ala Ile Arg Gly
 50 55 60
 Val Lys Ser Cys Ile Arg Arg Gly Tyr Arg Tyr Gln Pro
 65 70 75

<210>1195

<211>172

<212>PRT

<213>Chlamydia pneumoniae

<400>1195

Met Gly Phe Lys Asn Ile Cys Lys Gln Gly Ser Gln Leu Tyr Leu Asn
 1 5 10 15
 Gly Ile Phe Pro Glu Arg Ile Leu Ala Arg Lys Leu Lys Asn Cys Ala
 20 25 30
 Lys Ser Tyr Pro Arg Thr Ala Leu Thr Ile Glu Val Leu Val Ser Ser
 35 40 45
 Val Leu Gly Ala Leu Lys Val Ile Leu Ile Pro Cys Ala Ser Thr Tyr
 50 55 60
 Ala Ala Leu Thr Leu Pro Leu Arg Ala Leu Phe Asn Ala Ile Lys Thr
 65 70 75 80
 Lys Ser Cys Gln His Leu Ala Ser Tyr Ala Met Ala Trp Leu Leu His
 85 90 95
 Ile Leu Thr Ile Ala Val Ile Ile Gly Leu Val Phe Ser Leu Val Phe
 100 105 110
 Ile Pro Pro Pro Val Val Phe Ile Ser Leu Gly Leu Leu Met Ser Val
 115 120 125
 Thr Thr Ser Val Thr Leu Phe Gln Val His Lys Asn Leu Phe Pro Pro
 130 135 140
 Tyr Glu Pro Pro Pro Ser Arg Pro His Thr Pro Pro Phe Ala Asp
 145 150 155 160
 Glu Tyr Val Pro Leu Ile Ser Glu Ser Tyr Phe Asp
 165 170

<210>1196

<211>224

<212>PRT

<213>Chlamydia pneumoniae

<400>1196

Val Thr Pro Ser Ala Asp Asp Ala Lys Lys Ile Ala Val Glu Lys Lys
 1 5 10 15
 Lys Asp Leu Ser Ala Ser Ala Arg Met Glu Glu His Glu Ala Ser Gln
 20 25 30
 Arg Gln Asp Ala Arg His Arg Arg Ile Gly Arg Glu Ala Gln Gly Ser
 35 40 45
 Phe Phe Tyr Ser Ser Arg Asn Pro Glu His Arg Arg Ser Phe Gly Ser
 50 55 60
 Leu Ser Arg Phe Lys Thr Lys Pro Ser Asp Ala Ala Ser Thr Arg Pro
 65 70 75 80
 Ala Ser Ile Ser Pro Pro Phe Lys Asp Asp Phe Gln Pro Tyr His Phe
 85 90 95
 Lys Asp Leu Arg Ser Ser Ser Phe Gly Ser Gly Ala Ser Ser Ala Phe
 100 105 110
 Thr Pro Ile Met Pro Ala Ser Ser Arg Ser Pro Asn Phe Ser Thr Gly
 115 120 125
 Thr Val Leu His Pro Glu Pro Val Tyr Pro Lys Gly Gly Lys Glu Pro
 130 135 140
 Ser Ile Pro Arg Val Ser Ser Ser Ser Arg Arg Ser Pro Arg Asp Arg
 145 150 155 160
 Gln Asp Lys Gln Gln Gln Gln Asn Gln Asp Glu Glu Gln Lys Gln
 165 170 175

Gln Ser Lys Lys Lys Ser Gly Lys Ser Asn Gln Ser Leu Lys Thr Pro
 180 185 190
 Pro Pro Asp Gly Lys Ser Thr Ala Asn Leu Ser Pro Ser Asn Pro Phe
 195 200 205
 Ser Asp Gly Tyr Asp Glu Arg Glu Lys Arg Lys His Arg Lys Asn Lys
 210 215 220
 <210>1197
 <211>139
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1197
 Leu Ile Lys Lys Arg Ala Ile Phe Glu Arg Met Phe Pro Ile Pro Pro
 1 5 10 15
 Pro His Cys Pro Pro Asn Asn Lys Asn Asn Phe Tyr His Leu Thr Thr
 20 25 30
 Asp Thr Lys Asp Pro Leu Leu Leu Arg Ile Leu Arg Thr Ile Gly Tyr
 35 40 45
 Val Leu Leu His Ile Ile Thr Leu Gly Leu Leu Leu Leu Ile His Tyr
 50 55 60
 Tyr Lys His His Arg Val Val Arg Lys Glu Gly Leu Pro Thr Pro Pro
 65 70 75 80
 Thr Leu Pro Lys Gly Pro Glu Pro Lys Thr Ile Glu Ile Ala Lys Gln
 85 90 95
 Pro Pro Lys Asp Gly Glu Asp Lys Lys Pro Asp Val Pro Lys Pro Gly
 100 105 110
 Thr Pro Pro Pro Glu Asp Thr Pro Pro Pro Pro Pro Lys Ala Pro Ser
 115 120 125
 Pro Ala Ser Pro Lys Val Pro Lys Thr Thr Cys
 130 135
 <210>1198
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1198
 Val Val Glu Ser Ala Phe Tyr Gln Gln Val Val Leu Gly Thr Phe Gly
 1 5 10 15
 Leu Ala Gly Glu Gly Ala Leu Gly Gly Gly Gly Val Ser Ser Gly
 20 25 30
 Gly Gly Val Pro Gly Leu Gly Thr Ser Gly Phe Leu Ser Ser Pro Ser
 35 40 45
 Leu Gly Gly Cys Leu Ala Ile Ser Ile Val Phe Gly Ser Gly Pro Leu
 50 55 60
 Gly Arg Val Gly Gly Val Gly Lys Pro Ser Phe Leu Thr Thr Arg
 65 70 75
 <210>1199
 <211>90
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1199
 Leu Asp Asp Ser Trp Ile Leu Glu Val Lys Val Thr Pro Lys Ala Lys
 1 5 10 15
 Glu Asn Lys Ile Val Gly Phe Asp Gly Gln Ala Leu Lys Val Arg Val
 20 25 30
 Thr Glu Pro Pro Glu Lys Gly Lys Ala Asn Asp Ala Val Ile Ser Leu
 35 40 45
 Leu Ala Lys Ala Leu Ser Leu Pro Lys Arg Asp Val Thr Leu Ile Ala
 50 55 60
 Gly Glu Thr Ser Arg Lys Lys Lys Phe Leu Leu Pro Asn Arg Val Gln
 65 70 75 80
 Asp Ile Ile Phe Ser Leu His Ile Asp Val
 85 90
 <210>1200
 <211>107
 <212>PRT

<213>Chlamydia pneumoniae

<400>1200

Leu Gln Asn Ser Met His Lys Val Phe Ala Asp Pro Ser Leu Thr Asp
 1 5 10 15
 Thr Ile Thr Leu Pro Ile Asp Ala Pro Gly Asp Pro Ala Tyr Pro His
 20 25 30
 Val Leu Gly Glu Ala Phe Ile Ser Pro Gln Ala Ala Leu Arg Phe Leu
 35 40 45
 Glu Asn Thr Ser Pro Asn Gln Glu Asp Ile Tyr Glu Glu Ile Ser Arg
 50 55 60
 Tyr Leu Val His Ser Ile Leu His Met Leu Gly Tyr Asp Asp Thr Ser
 65 70 75 80
 Ser Glu Glu Lys Arg Lys Met Arg Val Lys Glu Asn Gln Ile Leu Cys
 85 90 95
 Met Leu Arg Lys Lys His Ala Leu Leu Thr Ala
 100 105

<210>1201

<211>279

<212>PRT

<213>Chlamydia pneumoniae

<400>1201

Met Ser Ser Leu Leu Ser Cys Gly Arg Ile Glu Pro Thr Arg Val Thr
 1 5 10 15
 Cys Ser Leu Lys Thr Tyr Leu Glu Asp Thr Ser Gln Asn Gln Leu Ser
 20 25 30
 Thr Arg Leu Val Arg Ala Ser Val Ile Phe Leu Cys Ala Leu Leu Ile
 35 40 45
 Ile Leu Val Cys Val Ala Leu Ser Ser Leu Ile Pro Ser Ile Met Ala
 50 55 60
 Leu Ala Thr Ser Phe Thr Val Met Gly Leu Ile Leu Phe Val Met Ser
 65 70 75 80
 Leu Leu Gly Asp Val Ala Ile Ile Ser Tyr Leu Thr Tyr Ser Thr Val
 85 90 95
 Thr Ser Tyr Arg Gln Asn Lys Arg Ala Phe Glu Ile His Lys Pro Ala
 100 105 110
 Arg Ser Val Tyr Tyr Glu Gly Val Arg His Trp Asp Leu Gly Arg Ser
 115 120 125
 Ser Leu Gly Thr Gly Glu Ile Pro Ile Val Arg Thr Leu Phe Ser Pro
 130 135 140
 Phe Gln Asn His Gly Leu Asn His Ala Leu Ala Lys Ile Phe Leu
 145 150 155 160
 Phe Met Glu His Phe Ser Pro Glu Pro Pro Asn Glu Pro Leu Val Asp
 165 170 175
 Trp Ala Cys Leu Ile Arg Asp Phe Arg Pro His Val Ser Ser Leu Cys
 180 185 190
 Phe Val Ile Glu Lys Gln Gly Ser Ser Leu Arg Thr Lys Glu Gly Asn
 195 200 205
 Thr Ile Cys Glu Ala Phe Arg Ser Asp Tyr Asp Ala His Phe Ala Met
 210 215 220
 Val Asp Cys Tyr Arg Leu Ile His Ser Lys Leu Ile Ile Glu Lys Met
 225 230 235 240
 Gly Leu Lys Asn Ile Asp Ile Ile Pro Ser Val Met Val Arg Glu Asp
 245 250 255
 Tyr Pro Ser Arg Pro Gly Glu Gly Tyr Arg Glu Gly Leu Leu Arg Met
 260 265 270
 Tyr Gly Gly Lys Gly Ala Leu
 275

<210>1202

<211>239

<212>PRT

<213>Chlamydia pneumoniae

<400>1202

Leu Lys Val Gln Lys Leu Arg Gln Pro Ser Phe Tyr Pro Lys Arg Leu
 1 5 10 15

Met Thr Leu Tyr Leu Gly Leu Asn Gln Lys Thr Ala Arg Lys Tyr Gln
 20 25 30
 Ala His Tyr Leu Pro Ile Leu Thr Leu Phe Pro Tyr Ala Lys Ser Thr
 35 40 45
 Pro Gln Asn Lys Arg Ala Leu Gln Phe Leu Pro Gln Ala Thr His Val
 50 55 60
 Ile Leu Thr Ser Pro Ser Ser Thr His Leu Phe Leu Ser Arg Met Thr
 65 70 75 80
 Ser Leu Leu Ser Lys Ala Thr Leu Lys Thr Lys Thr Tyr Leu Cys Ile
 85 90 95
 Gly Glu Ser Thr Lys Glu Arg Leu Leu Ser Phe Leu Gly Gln Val Lys
 100 105 110
 Tyr Val Val Ala Thr Gln Glu Ile Ala Glu Gly Ile Phe Pro Leu Leu
 115 120 125
 Gln Ala Leu Pro Ser Ser Ala Arg Ile Leu Tyr Pro His Ser Ser Leu
 130 135 140
 Ala Arg Pro Val Ile Arg Glu Phe Leu Tyr Asn Arg Phe Thr Phe Phe
 145 150 155 160
 Ser Tyr Pro His Tyr Thr Val Lys Pro Arg Lys Leu Lys Lys Asn Ile
 165 170 175
 Leu Ser Lys Tyr Lys Lys Ile Ile Phe Thr Ser Pro Ser Thr Val Arg
 180 185 190
 Ala Phe Ala Lys Ile Phe Pro Arg Phe Pro Glu Lys Thr Tyr Trp Cys
 195 200 205
 Gln Gly Arg Met Thr Leu Gln Glu Phe Gln Lys Phe Ser Ser Gln Lys
 210 215 220
 Gln Val Ser Leu Leu Glu Thr Leu Gly Lys Ser Arg Thr Ser Pro
 225 230 235

<210>1203

<211>110

<212>PRT

<213>Chlamydia pneumoniae

<400>1203

Met Ala Ser Ser Ala Thr Pro Gly Phe Asp Gly Thr Ala Pro Ser Leu
 1 5 10 15
 Phe Pro Pro Ala Thr Arg Pro Arg Tyr Asn Phe Lys Leu Ala Leu Phe
 20 25 30
 Val Thr Ile Ala Ile Ala Leu Val Trp Ile Ala Leu Ile Ala Thr Thr
 35 40 45
 Ile Ala Ile Gly Leu Cys Ile His Pro Leu Cys Ser Phe Ile Phe Leu
 50 55 60
 Thr Ala Ile Pro Leu Tyr Phe Ile Ser Arg Tyr Ile Cys Ser His Tyr
 65 70 75 80
 Ala Arg Asn Val Tyr Ile Ala Leu Asp Val Val Pro Asp His Ser Lys
 85 90 95
 Leu Gln Asp Met Arg Ser His Ser Pro Ile Phe Ser Asp Arg
 100 105 110

<210>1204

<211>196

<212>PRT

<213>Chlamydia pneumoniae

<400>1204

Met Leu Ile Leu Gly Leu Leu Thr Pro Thr Phe Gly Ser Leu Lys Thr
 1 5 10 15
 Phe Pro Ser His Ser Ala Gly Lys Gln Thr His Ser Met Ile Gly Trp
 20 25 30
 Val Pro Gln His Phe Ser Tyr Asp Pro Cys Phe Pro Ile Ser Val Lys
 35 40 45
 Asp Val Val Leu Ser Gly Arg Leu Ser Gln Leu Ser Trp His Xaa Lys
 50 55 60
 Tyr Lys Xaa Lys Asp Phe Glu Ala Val Asp His Ala Leu Asp Asn Val
 65 70 75 80
 Gly Leu Ser Asp His His His His Cys Phe Ala His Leu Ser Gly Gly
 85 90 95

Gln Ile Gln Arg Val Leu Leu Ala Arg Ala Leu Ala Ser Tyr Pro Glu
 100 105 110
 Ile Leu Ile Leu Asp Glu Pro Thr Thr Asn Ile Asp Pro Asp Asn Gln
 115 120 125
 Gln Arg Ile Leu Ser Ile Leu Lys Lys Leu Asn Arg Thr Cys Thr Ile
 130 135 140
 Leu Met Val Thr His Asp Leu His His Thr Thr Asn Tyr Phe Asn Lys
 145 150 155 160
 Val Phe Tyr Met Asn Lys Thr Leu Thr Ser Leu Ala Asp Thr Ser Thr
 165 170 175
 Leu Thr Asp Gln Phe Cys Cys His Pro Tyr Lys Asn Gln Glu Phe Ser
 180 185 190
 Cys Ser Pro His
 195

<210>1205

<211>92

<212>PRT

<213>Chlamydia pneumoniae

<400>1205

Met Leu Ser Ser Leu Ile Arg Asp Ser Phe Pro Leu Leu Ile Leu Leu
 1 5 10 15
 Pro Thr Phe Leu Ala Ala Leu Gly Ala Ser Val Ala Gly Gly Val Met
 20 25 30
 Gly Thr Tyr Ile Val Val Lys Arg Ile Val Ser Ile Ser Gly Ser Ile
 35 40 45
 Ser His Ala Ile Leu Gly Gly Ile Gly Leu Thr Leu Trp Ile Gln Tyr
 50 55 60
 Lys Leu His Leu Ser Phe Phe Pro Met Tyr Gly Ala Ile Val Gly Ala
 65 70 75 80
 Ile Phe Leu Ala Leu Cys Ile Gly Lys Arg Ser Thr
 85 90

<210>1206

<211>188

<212>PRT

<213>Chlamydia pneumoniae

<400>1206

Leu His Arg Gln Lys Ile His Leu Lys Tyr Gln Glu Arg Glu Asp Ser
 1 5 10 15
 Leu Ile Ala Met Ile Trp Ser Val Gly Met Ala Ile Gly Ile Ile Phe
 20 25 30
 Ile Ser Arg Leu Pro Thr Phe Asn Gly Glu Leu Ile Asn Phe Leu Phe
 35 40 45
 Gly Asn Ile Leu Trp Val Thr Pro Ser Asp Leu Tyr Ser Leu Xaa Ile
 50 55 60
 Phe Asp Leu Leu Val Leu Gly Ile Val Val Leu Cys His Thr Arg Phe
 65 70 75 80
 Leu Ala Leu Cys Phe Asp Glu Arg Tyr Thr Ala Leu Asn His Cys Ser
 85 90 95
 Val Gln Leu Trp Tyr Phe Leu Leu Leu Val Leu Thr Ala Ile Thr Ile
 100 105 110
 Val Met Leu Ile Tyr Val Met Gly Thr Ile Leu Met Leu Ser Met Leu
 115 120 125
 Val Leu Pro Val Ala Ile Ala Cys Arg Phe Ser Tyr Lys Met Thr Arg
 130 135 140
 Ile Met Phe Ile Ser Val Leu Leu Asn Ile Leu Cys Ser Phe Ser Gly
 145 150 155 160
 Ile Cys Ile Ala Tyr Cys Leu Asp Phe Pro Val Gly Pro Thr Ile Ser
 165 170 175
 Leu Leu Met Gly Leu Xaa Tyr Thr Ala Ser Leu Val
 180 185

<210>1207

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1207

Val Phe Ser Tyr Leu Leu Leu Cys Ile Ile Leu Val Tyr Val Arg Phe
 1 5 10 15
 Met Tyr Glu Gly Lys Ser Arg Met Ala Ser Pro Thr Pro Gly Gln Leu
 20 25 30
 His Leu Gln Gln Lys Val Glu Ser Lys Ala Tyr Asp Tyr Ser Arg Ser
 35 40 45
 Leu Ala Met Ile Ala Thr Ala Leu Leu Phe Phe Ile Val Ala Leu Ile
 50 55 60
 Leu Ser Gly Leu Ser Leu Leu Pro Gln Val Phe Leu Pro Phe Ser Gly
 65 70 75 80
 Ala Tyr Phe Ile Ile Gly Ser Phe Leu Ala Phe Ile Ala Leu Gly Ile
 85 90 95
 Leu Leu Ile Asn Cys Val Cys Asp Leu Lys Gln Tyr Leu Thr Ser Ser
 100 105 110

<210>1208

<211>320

<212>PRT

<213>Chlamydia pneumoniae

<400>1208

Val Leu Ile Ser Ile Ser Leu Ala Thr Leu Pro Ile Leu Ala Phe Ser
 1 5 10 15
 Trp Ala Ser Phe Ile Glu Pro Asn Trp Leu Arg Thr Thr Ala Ile Pro
 20 25 30
 Trp Arg Leu Pro Lys Lys His Ala His Leu His Gly Leu Arg Ile Ala
 35 40 45
 Gln Ile Ser Asp Leu His Phe His Lys Arg Val Pro Glu Lys Phe Leu
 50 55 60
 Asn Lys Val Ser Lys Ser Ile Lys Asn Phe Ser Pro Asp Leu Ile Val
 65 70 75 80
 Phe Cys Gly Asp Leu Leu Cys Arg Ala Arg Leu Glu Asp Lys Glu Arg
 85 90 95
 Leu Glu Thr Phe Leu Asn Thr Leu Glu Ala Pro Leu Gly Val Phe Ala
 100 105 110
 Ile Leu Gly Asn His Asp Tyr Ser Ser Tyr Ile Ser Arg Asn Thr Lys
 115 120 125
 Gly Glu Ile Thr Cys Ile Pro Glu Glu Lys Ser Arg Pro Ile Gln Arg
 130 135 140
 Ala Ile Ile Ala Val Met Gln Gly Leu Phe Ser Ser Pro Ser Tyr Arg
 145 150 155 160
 Tyr Asp Pro Asn Leu Thr Pro Gln Glu Pro His Pro Asp Leu Leu Lys
 165 170 175
 Leu Leu Lys Asn Thr Pro Leu Thr Leu Leu His Asn Thr Thr His Val
 180 185 190
 Ile Pro Asn Thr Leu Asn Ile Val Gly Leu Gly Asp Leu Phe Ala Arg
 195 200 205
 Gln Phe His Pro Glu Gln Ala Phe Lys Asn Tyr Asp Pro Ser Leu Pro
 210 215 220
 Gly Leu Leu Leu Ser His Asn Pro Asp Gly Ile Thr Arg Leu Gln Gln
 225 230 235 240
 Tyr Pro Gly Asp Phe Val Leu Ser Gly His Ser His Gly Pro Gln Val
 245 250 255
 Thr Leu Ser Trp Pro Lys Phe Ala Arg Lys Phe Phe Glu Arg Leu Ser
 260 265 270
 Gly Leu Glu Asn Pro Tyr Leu Ala Arg Gly Tyr Phe Val Thr Lys Glu
 275 280 285
 Gly Lys Gln Leu Tyr Val Asn Arg Gly Leu Gly Gly Leu Lys Arg Ile
 290 295 300
 Arg Phe Cys Ser Pro Pro Glu Ile Cys Tyr Ile Thr Cys Ser Tyr Asp
 305 310 315 320

<210>1209

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1209

```

Met Thr Ala Thr Met Ser Leu Leu Asn Leu Pro Ser Ser Gln Asp Ser
 1          5          10          15
Ala Ser Glu Asp Ser Thr Ser Gln Ser Gln Ile Phe Asp Pro Ile Arg
          20          25          30
Asn Arg Glu Leu Val Ser Thr Pro Glu Glu Lys Val Arg Gln Arg Leu
          35          40          45
Leu Ser Phe Leu Met His Lys Leu Asn Tyr Pro Lys Lys Leu Ile Ile
          50          55          60
Ile Glu Lys Glu Leu Lys Thr Leu Phe Pro Leu Leu Met Arg Lys Gly
          65          70          75          80
Thr Leu Ile Pro Lys Arg Arg Pro Asp Ile Leu Ile Ile Thr Pro Pro
          85          90          95
Thr Tyr Thr Asp Ala Gln Gly Asn Thr His Asn Leu Gly Asp Pro Lys
          100          105          110
Pro Leu Leu Leu Ile Glu Cys Lys Ala Leu Ala Val Asn Gln Asn Ala
          115          120          125
Leu Lys Gln Leu Leu Ser Tyr Asn Tyr Ser Ile Gly Ala Thr Cys Ile
          130          135          140
Ala Met Ala Gly Lys His Ser Gln Val Ser Ala Leu Phe Asn Pro Lys
          145          150          155          160
Thr Gln Thr Leu Asp Phe Tyr Pro Gly Leu Pro Glu Tyr Ser Gln Leu
          165          170          175
Leu Asn Tyr Phe Ile Ser Leu Asn Leu
          180          185

```

<210>1210

<211>173

<212>PRT

<213>Chlamydia pneumoniae

<400>1210

```

Met Ala Asp Asp Thr Leu Ile Pro Lys Leu Met Lys Asn Ser Leu Ser
 1          5          10          15
Gln Ala Cys Ser Glu Gly Leu Leu Ile Ala Lys Tyr Pro Pro Leu Gln
          20          25          30
Val Ile Val His Phe Asp Asn Asn Leu Val Val Lys Thr His Leu Ser
          35          40          45
Val Ala Pro Val Phe Ser Cys Leu Phe Leu Gly Pro Ala Ala His Lys
          50          55          60
Ala Met Gln Glu Ile Val Leu Trp Cys Ser Arg Tyr Ala Asn Lys Glu
          65          70          75          80
His Pro Pro Phe Ser Ser His Phe Ala Lys Asp Leu Ile Pro Ser Gln
          85          90          95
Tyr Leu Glu Ile Leu Asn Cys Val Ala Glu Ile Pro Phe Gly Glu Gln
          100          105          110
Gln Thr Tyr Ala Glu Ile Ala Lys Lys Thr Asp Thr His Pro Arg Thr
          115          120          125
Val Gly Ala Ala Cys Lys Gln Asn Pro Phe Leu Leu Phe Phe Pro Cys
          130          135          140
His Arg Val Val Gly Ser His Gly Glu Arg Asn Tyr Val Leu Gly Pro
          145          150          155          160
Val Ile His Glu Ile Leu Leu Lys Phe Glu Asn Ser Tyr
          165          170

```

<210>1211

<211>137

<212>PRT

<213>Chlamydia pneumoniae

<400>1211

```

Met Ile Glu Asn Asp Phe Pro Glu Ala Ser Asn Phe Glu Ser Ser His
 1          5          10          15
Phe Tyr Arg Asp Lys Val Gly Val Ile Ile Leu Cys Gly Gly Glu Gly
          20          25          30
Lys Arg Leu Ser Pro Leu Thr Asn Cys Arg Cys Lys Pro Thr Val Ser
          35          40          45
Phe Gly Gly Arg Tyr Lys Leu Ile Asp Ile Pro Ile Ser His Ala Ile

```

50 55 60
 Ser Ala Gly Phe Ser Lys Ile Phe Val Ile Gly Gln Tyr Leu Thr Tyr
 65 70 75 80
 Thr Leu Gln Gln His Leu Phe Lys Thr Tyr Phe Tyr His Gly Val Leu
 85 90 95
 Gln Asp Gln Ile His Leu Leu Ala Pro Glu Ala Arg Gln Gly Asp Gln
 100 105 110
 Ile Trp Tyr Gln Gly Thr Gln Met Gln Phe Glu Lys Thr Tyr Phe Ile
 115 120 125
 Ser Lys Ile Gln Lys Ser Asn Thr Phe
 130 135

<210>1212

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1212

Met Leu Ile Arg Leu Phe Leu Gly Ile Ser Leu Pro Lys Gly Phe Pro
 1 5 10 15
 Leu Tyr Leu Glu Pro Pro Leu Val Leu Ala Thr Phe Gln Gly Thr Gln
 20 25 30
 Phe Val Gly Thr Tyr Ser Glu Ala Thr Asn Pro Leu Tyr Ile Asp Asn
 35 40 45
 Leu Asn Leu Asn Tyr His Tyr Thr Gln Glu Leu Leu Tyr Lys Ala Val
 50 55 60
 Pro Cys Asn Tyr Lys Ser Ile Tyr Arg Glu Ile Pro Leu Ile Ile Phe
 65 70 75 80
 Pro Glu Val Leu Ile Gly Ser Thr Pro Thr Gln Ser Thr Glu
 85 90

<210>1213

<211>168

<212>PRT

<213>Chlamydia pneumoniae

<400>1213

Met Arg Gln Phe Cys Asn Leu Leu Ser Leu Ser Arg Leu Trp Leu Ala
 1 5 10 15
 Leu Tyr Phe Cys Gln Glu Lys Leu His Ile Arg Leu Leu Ala Ile Val
 20 25 30
 Gly Ala Met Leu Ser Asp Val Leu Asp Gly Tyr Leu Ala Arg Arg Tyr
 35 40 45
 Lys Ala Thr Ser Arg Leu Gly Ser Ile Leu Asp Pro Ile Thr Asp Lys
 50 55 60
 Val Phe Val Phe Val Cys Ile Thr Val Leu Tyr Met Glu Gly Ser Leu
 65 70 75 80
 Ser Ile Ala His Leu Phe Phe Ile Cys Ala Arg Asp Leu Phe Leu Xaa
 85 90 95
 Thr Phe Val Phe Tyr Leu Ser Leu Val Lys Gly Trp Lys Gly Tyr Asp
 100 105 110
 Tyr Gly Ser Leu Phe Trp Gly Lys Ile Phe Thr Val Val Gln Phe Ile
 115 120 125
 Ile Leu Leu Gly Val Thr Ala Gly Gly Glu Ile Pro Trp Thr Gly Leu
 130 135 140
 Val Pro Leu Val Ala Leu Gly Phe Leu Tyr Phe Leu Glu Arg Ile Met
 145 150 155 160
 Asp Tyr Lys Lys Gln Phe Leu Arg
 165

<210>1214

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>1214

Met Ser Arg Ser Leu Arg Lys Gly Pro Phe Val Asp His His Leu Leu
 1 5 10 15
 Lys Lys Val Arg Ala Met Asn Ile Glu Lys Lys Thr Pro Ile Lys
 20 25 30

Thr Trp Ser Arg Arg Ser Met Ile Thr Pro Glu Met Ile Gly His Thr
 35 40 45
 Phe Glu Val His Asn Gly Lys Lys Phe Leu Thr Val Phe Val Ser Glu
 50 55 60
 Thr Met Val Gly His Lys Leu Gly Glu Phe Ser Pro Thr Arg Ile Phe
 65 70 75 80
 Lys Ser His Pro Val Lys Lys Gly
 85

<210>1215

<211>252

<212>PRT

<213>Chlamydia pneumoniae

<400>1215

Met Leu Ile Val Leu Ala Phe Arg Gln Val Phe Phe Ser His Ser Arg
 1 5 10 15
 Ser Gln Leu Asp Arg Leu Lys Asn Tyr Leu Arg Leu Leu Lys Gln Asn
 20 25 30
 Phe Ala Ile Thr Leu Pro Lys Glu Arg Thr Ser Lys Gly His Ser Leu
 35 40 45
 Met Leu Thr Phe Asp Phe Ala Ser Phe Asp Phe Tyr Thr Asn Ile Phe
 50 55 60
 Pro Phe Leu Glu Glu Gln Lys Ile Pro Ala Val Val Gly Val Ala Ser
 65 70 75 80
 Arg Tyr Ile Pro Ser Asn Ala Ala Gln Asp Leu His Pro Ser His Arg
 85 90 95
 Leu Lys Pro Ser Glu Thr Leu Ala Phe Gln Asp Glu Ile Phe Ser Asn
 100 105 110
 Tyr Met Pro Phe Cys Cys Gln Asn Glu Leu Ile Glu Met Ala Lys Ser
 115 120 125
 Pro Tyr Ile Gln Leu Ala Ser Ser Gly Phe Ala Ile Arg Asn Leu Met
 130 135 140
 Asn Asn Pro Pro Tyr Leu Thr Thr Glu Ile Leu Leu Ser Arg His His
 145 150 155 160
 Ile Glu Thr Ile Thr Gly Ala Lys Pro Leu Ala Phe Leu Phe Pro Phe
 165 170 175
 Gly Lys Ser Asp Pro Thr Ser Arg Lys Leu Ala Ala Asp His Tyr Pro
 180 185 190
 Tyr Ser Phe Leu Leu Gly Asn Thr Ile Asn Arg Lys Leu Lys Thr His
 195 200 205
 Asn Ile Tyr Arg Leu Asp Ile Lys Pro Met Gln Tyr Val Cys Pro Ser
 210 215 220
 Leu Phe Gln Ser Ser Arg Tyr Leu Lys Asn Trp Ile Lys Glu Lys Ser
 225 230 235 240
 Lys Gln Leu Tyr Leu Lys Lys Gln Leu Pro Lys Arg
 245 250

<210>1216

<211>149

<212>PRT

<213>Chlamydia pneumoniae

<400>1216

Met Ala Asp Leu Glu Val Phe Gln Ala Asp Phe Ala Leu Leu Phe Glu
 1 5 10 15
 Ala Gly Leu Leu Ala Ile Lys Gln Gly Asp Glu Asp Ser Ala Arg Lys
 20 25 30
 Leu Phe Gln Ser Leu His Ile Leu Asn Pro Asn His Tyr Gly His Asp
 35 40 45
 Leu Gly Leu Ala Leu Ile Ser Leu His Lys Met Asp Leu Phe Asp Ala
 50 55 60
 Glu Glu Arg Leu Ser Ala Leu Ile Lys Gly Asn Glu Asp Asn Trp Ser
 65 70 75 80
 Ile Lys Ala Phe Leu Ser Leu Thr His Met Leu Ile Val Leu His Gln
 85 90 95
 Gly Ser Ser Phe Glu Val Arg Arg Glu Ser Leu Glu Ser Cys Leu Lys
 100 105 110

Phe Ala Asp Gln Val Ile Ala Asn Cys Lys Ile Glu Ser Arg Ala
 115 120 125
 Leu Ala Gln Ser Val Leu Asp Trp His Asp Thr Leu Val Ala Lys Ser
 130 135 140
 Ala Gly Pro Leu Gly
 145
 <210>1217
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1217
 Met Phe Phe Ala Pro Leu Leu Tyr Glu Ser Leu Arg Arg Gly Leu Met
 1 5 10 15
 His Pro Thr Ser His Met Gln Gln Gln Leu Ala Arg Leu Glu Phe Ile
 20 25 30
 Asn Asp Gln Leu Thr Thr Glu Leu Glu His Val Asn Glu Leu Leu Cys
 35 40 45
 Ser Leu Gly Phe Pro Glu Gly Leu Thr Thr Ile Lys Ala Ile Ala Glu
 50 55 60
 Glu Val Leu Ser Asp Asp Glu Pro Leu Leu Asp
 65 70 75
 <210>1218
 <211>467
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1218
 Leu Pro Ser Asn Arg Lys Asn Ala Lys Arg Asn Leu Tyr Lys Leu Ser
 1 5 10 15
 Phe Ile Ile Val Arg Lys Cys Val Val Thr Ser Ala Leu Asn Asp Phe
 20 25 30
 Phe Leu Thr Glu Thr Val Met Asn Ala Thr Lys His Cys Arg Ala Ser
 35 40 45
 Phe Ser Asn Ser Pro Arg His Leu Leu Ala Gln Leu Ala Glu Asp Ile
 50 55 60
 Thr Ser Thr His Gln Lys Pro Phe Thr Lys Arg Trp Ile Leu Val Ala
 65 70 75 80
 Asn Ala Thr Thr Gly His Trp Ile Lys Asn Gln Leu Val His Val Leu
 85 90 95
 Ser Asp His Ile Phe Met Gly Ser Thr Ile Phe Thr Ala Ser Asp Ser
 100 105 110
 Ile Val Lys His Leu Phe Leu Gly Ser Gly Cys Ser Gln Pro Asn Ile
 115 120 125
 Pro Asp Tyr Leu Thr Leu Pro Leu Leu Ile Asn Asn Ile Leu Glu Glu
 130 135 140
 Ile Ser Lys Ala Ser Lys Phe Glu Asn Gly Arg Glu Phe Leu Ser Pro
 145 150 155 160
 Pro Thr Tyr Gly Thr Thr Lys Lys Leu Ala Ala Ala Phe Lys Gln Phe
 165 170 175
 His Thr Phe Ser Gln Arg Pro Thr Lys Asn Ala Ser His Tyr Gln Glu
 180 185 190
 Leu Phe Gln Ile Leu Glu Ser His Phe Ser Ser Tyr Glu Glu Met Phe
 195 200 205
 Thr Thr Ile Leu Asn Asn Arg Thr Gln Glu Glu Asp Cys Ser Leu His
 210 215 220
 Ile Phe Gly Tyr Ala His Leu Pro Lys His Leu Ala Glu Phe Phe Ile
 225 230 235 240
 Asn Leu Ser Thr Tyr Phe Pro Val Tyr Phe Tyr Cys Phe Ser Pro Cys
 245 250 255
 Arg Glu Tyr Phe Gly Asp Leu Leu Ser Asp Arg Ala Ile Asp Phe Phe
 260 265 270
 Trp Asn Gln Leu Pro Asp Ser Pro Ile Lys Asn Ala Trp Glu His Tyr
 275 280 285
 Val Leu Ser Asp Arg Gln Ala Leu Leu Ala Asn Leu Ala His Lys Ser
 290 295 300

Gln Ser Ser Gln Asn Phe Phe Leu Asp Arg Glu Ile Asp Tyr Gln Glu
 305 310 315 320
 Met Phe Leu Pro Ser Lys His Asp Ser Ser Leu Gly Val Ile Gln Asn
 325 330 335
 Ser Ile Leu Asp Leu Lys Pro Thr Ser Pro Gln Asp Phe Ser Gln Thr
 340 345 350
 Lys Gln Thr Ile Cys Ile Tyr Arg Ala Leu Asn Ile Pro Arg Glu Val
 355 360 365
 Gln Glu Val Phe Cys Lys Val Thr Glu Leu Leu His Arg Gly Val Ser
 370 375 380
 Pro Glu Glu Ile Phe Ile Leu Ser Ser His Ile Glu Ser Tyr Lys Val
 385 390 395 400
 His Leu Asn Ala Ile Phe Asn Pro His Val Pro Ile Tyr Phe Thr Asp
 405 410 415
 Glu Val Asp Pro Arg Ala Glu Asp Leu Arg Asn Lys Asn Pro Pro Thr
 420 425 430
 Phe Phe Tyr Phe Thr Asn Thr Arg Gly Phe Thr Leu His Ser Ser Thr
 435 440 445
 Pro Tyr Ala Pro Thr Thr Thr Thr Tyr Arg Ser Lys Gln Gly Ser
 450 455 460
 Leu Ser Asp
 465

<210>1219

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1219

Leu Glu Ala Pro Met Asn Glu Gly Ile His Ser Val Cys Phe Gln Lys
 1 5 10 15
 Thr Pro Arg Leu Thr Ala Lys Ser Val Val Ser Met Glu Met Leu Leu
 20 25 30
 Thr Thr Gln Gln Leu Pro Ser Ala Glu Gly Met Pro Ser Val Ala Asn
 35 40 45
 Leu Glu Ala Asp Phe Leu Arg Ala Glu Ala Leu Leu Ala Glu Met Arg
 50 55 60
 Glu Ile Arg Gly Cys Leu Glu Gln Ser Leu Arg Thr Leu Val Pro Ser
 65 70 75 80
 Glu

<210>1220

<211>95

<212>PRT

<213>Chlamydia pneumoniae

<400>1220

Met Met Lys Tyr Leu Pro Tyr Ile Ala Ile Thr Ala Cys Ile His Gly
 1 5 10 15
 Gly Ile Leu Leu Leu Val Phe Ala Ser Pro Leu Pro Lys Lys Arg Leu
 20 25 30
 Gln Pro Lys Ala Phe Gln Glu Lys Leu Val Thr Ile Gln Pro Lys Pro
 35 40 45
 Pro Val Pro Thr Pro Ser Val Val Val Asp Pro Ala Lys Thr Ile Arg
 50 55 60
 Pro Ser Val Leu Arg Ser His Lys Asn Lys Leu Asn Ala Ala Leu Leu
 65 70 75 80
 Lys Arg Thr Ser Arg Arg Leu Tyr Lys Asn Pro Phe Gln Lys Leu
 85 90 95

<210>1221

<211>96

<212>PRT

<213>Chlamydia pneumoniae

<400>1221

Leu Asn Lys Phe Lys Thr Tyr Leu Gln Thr Ala Leu Ile Ala Pro Phe
 1 5 10 15
 Phe Ser Phe Pro Ala Leu Ser Gly Ser Phe Ser Ser Ile Gln Ala Glu

20 25 30
 Glu Ile Xaa Gln Gln Val Asn His Pro Gly Ala Glu Leu Ser Glu
 35 40 45
 Gly Ser Tyr Ile Pro Gly Leu Gln Thr Phe Arg Leu Gly Ile Lys Ile
 50 55 60
 Tyr Ser Phe Gln Arg Glu Pro Tyr Leu Leu Glu Glu Ser Arg Arg Asn
 65 70 75 80
 Trp Lys Ser Ser Gln Asn Phe Leu Ala Val Ala Glu Arg Phe Arg Gly
 85 90 95

<210>1222

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1222

Val Arg Ala Leu Phe Arg Ser Gly Tyr Lys Gly Arg Gln Gly Ile Tyr
 1 5 10 15
 Glu Phe Leu Arg Pro Asn Thr Leu Phe Arg Ser Glu Val Ala Ser Asn
 20 25 30
 Arg Pro Tyr His Ile Leu Arg Glu Thr Ala Glu Gln Asn Gly Phe Leu
 35 40 45
 Pro Ile Leu Glu His Gly Ile Ala Leu Ala Val Ser Gly Glu Thr Thr
 50 55 60
 Leu Ala Glu Val Leu Arg Val Thr Lys Arg Cys Asp
 65 70 75

<210>1223

<211>185

<212>PRT

<213>Chlamydia pneumoniae

<400>1223

Val Pro Thr Leu Ala Lys Ser Phe Tyr Ile Asn Ile Arg Asp Ser Arg
 1 5 10 15
 Phe Tyr Ser Trp Leu Cys Phe Ile Met Lys Glu Thr Tyr Tyr Arg Asp
 20 25 30
 Phe Leu His Glu Asn Tyr Leu Lys Asn Lys Lys Ser Met Phe Met Lys
 35 40 45
 Ile Tyr Lys Thr Ala Gly Glu Phe Phe Leu Ala Asn Ala Lys Trp Pro
 50 55 60
 Leu Val Pro Ala Gly Tyr Arg Arg Val Arg Gly Lys Asp Phe Val Leu
 65 70 75 80
 Ser Pro Leu Val Asp Leu Val Ile Leu Phe Pro Trp Val Thr Lys Asp
 85 90 95
 Ser Arg Tyr Ser Pro Cys Ser Met Thr Phe Thr Cys Ile Cys Arg Ser
 100 105 110
 Ile Val Glu Cys Ile Pro Val Val Ser Thr Leu Phe Gly Ile Gly Arg
 115 120 125
 Phe Cys Ala Val Trp Cys Val Glu Gly Phe Ser Gly Ser Thr Phe Asp
 130 135 140
 Lys Ile Tyr His Thr Ile Val Ala Val Leu Gly Ile Leu Gly Leu Gly
 145 150 155 160
 Ile Leu Thr Phe Ile Leu Arg Ile Ile Phe Ser Val Leu Met Leu Pro
 165 170 175
 Val Trp Phe Leu Phe Lys Cys Tyr Ser
 180 185

<210>1224

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1224

Met Trp Trp Asn Pro Ala Val Glu Asn Gln Ala Thr Asp Arg Val His
 1 5 10 15
 Arg Ile Gly Gln Ser Arg Ser Val Ser Ser Tyr Lys Leu Val Thr Leu
 20 25 30
 Asn Thr Ile Glu Glu Lys Ile Leu Thr Leu Gln Asn Arg Lys Xaa Ser
 35 40 45

Leu Val Lys Lys Val Ile Asn Ser Asp Asp Glu Val Val Ser Lys Leu
 50 55 60
 Thr Trp Glu Glu Val Leu Glu Leu Leu Gln Ile
 65 70 75

<210>1225

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>1225

Met Arg Asp Arg Leu Gly Ser Leu Ser Leu Ile Leu Lys Val Lys Ile
 1 5 10 15
 His Lys Tyr Leu Asp Thr Leu His Asn Gln Lys Arg Leu Ala Leu Thr
 20 25 30
 Val Ser Arg Asn Ile Gln Ala Thr Asn Lys Arg Ile Ala Asp Leu His
 35 40 45
 Leu Glu Arg Tyr Glu His Phe Ile Ser Arg Asp Asn Ile Lys His Tyr
 50 55 60
 Asp Ile Leu Leu Glu Tyr Leu Lys Thr Leu Gln Ser Ser Leu Tyr Lys
 65 70 75 80
 Gln Gln Ser Glu Ser Leu Arg Phe Leu Glu Ile His His Gln Gln Leu
 85 90 95
 Gln Glu Leu Ile Asn Arg Arg Lys Ile Ile Glu Lys Ile Lys Asn Asn
 100 105 110
 Lys Tyr Ser Lys Asp Gln Glu Ile Gly Thr
 115 120

<210>1226

<211>178

<212>PRT

<213>Chlamydia pneumoniae

<400>1226

Val Thr Thr Pro Gln Ser Pro Gly Ser Leu Ser Gln Ser His Leu Pro
 1 5 10 15
 His Pro His Asp Pro Trp Asp Thr Glu Pro Thr Ser Leu Xaa Glu Xaa
 20 25 30
 Pro Asn Asp Lys Ala Ser Gln Glu Leu His Ser Leu Val His Leu Phe
 35 40 45
 Arg Lys Leu Ser Ile His Leu Leu Ser Glu Val Glu Lys Thr Val Gln
 50 55 60
 Gln Leu Lys Pro Asp Leu Leu Glu Leu Ala Leu Leu Ile Cys Glu Lys
 65 70 75 80
 Phe Leu Tyr Lys Lys Leu Glu Asn Pro Gln Glu Leu Ala Leu Leu Leu
 85 90 95
 Ser Thr Ala Leu Gln Arg His Thr Thr Leu Arg Ser Leu Thr Pro Ile
 100 105 110
 Lys Val Phe Leu His Pro Glu Asp Leu Lys Thr Leu Thr Asp Trp Ile
 115 120 125
 Ser Thr His Glu Leu Pro Met Ile Lys His Ala Glu Phe Phe Pro Asp
 130 135 140
 Thr Ser Cys Arg Arg Ser Gly Phe Lys Ile Glu Thr Pro Asn Gly Ile
 145 150 155 160
 Leu Arg Gln Glu Ile Ser Glu Glu Leu Asp His Leu Leu Ser Val Leu
 165 170 175
 Thr Ala

<210>1227

<211>161

<212>PRT

<213>Chlamydia pneumoniae

<400>1227

Leu Leu Leu Arg Tyr His Ala Lys Ala Glu Lys Pro Thr Leu Gln Leu
 1 5 10 15
 Thr Leu Asn Glu Asn Tyr Ile Ala His Leu Thr Lys Glu Glu Ser Glu
 20 25 30
 Lys Ile Val Ala His Thr Lys His Tyr Leu Leu Ser Asn Xaa Asp Asp

35 40 45
 Ser Tyr Asp Ile Val Ile Glu Thr Leu Pro Phe Ala Arg Leu Gln Asn
 50 55 60
 Lys Lys Ser Phe Ser Ala Lys Val Leu Ile Gly Ser Met Ile Leu Val
 65 70 75 80
 Ile Ser Leu Met Ile Val Ala Leu Ala Ser Phe Tyr Leu Ala Arg His
 85 90 95
 Ala Tyr Glu Arg Val Ser Pro Glu Pro Arg Lys Ile Lys Arg Gly Ile
 100 105 110
 Asn Ile Ser Lys Leu Leu Glu Ile Ile Gln Lys Glu Ser Pro Glu Lys
 115 120 125
 Ile Ala Leu Ile Leu Ser Tyr Leu Asp Pro Lys Lys Ala Glu Ala Leu
 130 135 140
 Leu Asn Arg Leu Pro Glu Asp Leu Lys His Gln Val Leu Lys Tyr Lys
 145 150 155 160
 Leu

<210>1228

<211>75

<212>PRT

<213>Chlamydia pneumoniae

<400>1228

Val Phe Phe Gln Asn Leu Ala Lys Lys Leu Thr Ala Leu Gly Ile Ser
 1 5 10 15
 Pro Leu Gly Cys Leu Leu Ile Gly Gly Val Val Ser Cys Ala Ile Leu
 20 25 30
 Phe Gly Arg Ser Ser Asn Pro Ser Leu Ala Pro Thr Gln Val Lys Thr
 35 40 45
 Glu Lys Thr Ser Gly Asn Trp Leu Lys Leu Thr Gln Met Gly Asn Pro
 50 55 60
 Lys Leu Ile Glu Ser Leu Thr Lys Lys Asp Ser
 65 70 75

<210>1229

<211>100

<212>PRT

<213>Chlamydia pneumoniae

<400>1229

Met Gly Tyr Val Phe Tyr Val Ile Ala Gly Ser Ile Phe Leu Gly Ile
 1 5 10 15
 Ser Leu Gly Ala Tyr Cys Gln Leu Tyr Tyr Ser Val Lys Ser Val Leu
 20 25 30
 Phe Ser Trp Tyr Leu Leu Thr Val Tyr Ala Leu Glu Lys Arg His Ala
 35 40 45
 Leu Leu Ala Leu Ser Gln Leu Val Gly Glu Glu Asp Ala Gln Ser Gln
 50 55 60
 Lys Glu Ile Asp Phe Leu Ser Gln Cys Asp Lys Leu Ser Trp Arg Ala
 65 70 75 80
 Phe Leu Lys Asn Ser Tyr Glu Ile Ile Pro Thr Phe Gln Arg Asp Gly
 85 90 95
 Arg Pro Ser Phe
 100

<210>1230

<211>103

<212>PRT

<213>Chlamydia pneumoniae

<400>1230

Val Thr Ser Ser Leu Gly Val Arg Ser Ser Lys Ile Ala Thr Arg Ser
 1 5 10 15
 Ser Gln His Phe Lys Glu Met Glu Asp Leu Leu Ser Glu Arg Val Gln
 20 25 30
 Gly Phe Leu Glu Ser Ile Glu Thr Ile Ala Glu His Asp Arg Ala Ile
 35 40 45
 Leu Cys Ile Glu Asn Phe Trp Ala Ser Lys Asn Leu Phe Asp Phe Glu
 50 55 60

Ile Ala Ala Tyr Glu Glu Ala Val Glu Lys Tyr Leu Lys Leu Arg Gln
 65 70 75 80
 Arg Ala Pro Leu Arg Leu Ala Ser Lys Leu Phe Arg Phe Leu Asp Val
 85 90 95
 Pro Ser Ile Arg Phe Ser Ser
 100

<210>1231

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1231

Ser Ile Ala Thr Gly Glu Thr Met Leu Tyr Phe Ile Glu Gln Leu Asn
 1 5 10 15
 Lys Leu Ser Thr Ser Phe Cys Val Phe Pro Met Ile Leu Leu Leu Gly
 20 25 30
 Gly Phe Leu Thr Trp Lys Leu Arg Gly Leu Gln Phe His Gly Leu Lys
 35 40 45
 Leu Gly Phe Asn Leu Met Leu Gln Asn Lys Leu Asp Asp Ser Ser Ser
 50 55 60
 Lys Ala Asn Glu Val Ser Tyr Glu Ala Val Ala Gly Ile Leu Ala
 65 70 75 80
 Gly Asn Phe Gly Thr Gly Asn Ile Ala Gly Met Leu Ser Pro
 85 90

<210>1232

<211>240

<212>PRT

<213>Chlamydia pneumoniae

<400>1232

Val Pro Asn Arg His Val Asp Met Asn Ser Trp Trp Arg Ser Ala Cys
 1 5 10 15
 Tyr Pro Arg Ser Thr Phe Tyr Pro Leu Ser Asp Gly Asp Ser Thr Phe
 20 25 30
 His Arg Arg Ile Thr Lys Pro Asp Phe Arg Leu Cys Ser Thr Cys Lys
 35 40 45
 Ser Cys Ser Gln Pro Ile Leu Tyr Leu Tyr Ala Leu Leu Val Ile Ala
 50 55 60
 Asn His Asp Glu Ile Ser Phe Gly Leu Leu Arg Tyr Phe Leu Gly Gly
 65 70 75 80
 Tyr Arg Pro Ser Lys Thr Ala Arg Leu Ala Met Ser Ile Leu Gln Ile
 85 90 95
 His Gly Val Met Leu Asp Ser Gln Leu Val Lys Thr Ser Ile Ser Thr
 100 105 110
 Met Thr Pro Thr Leu Leu Thr Lys Ser Val His Ser Leu Leu Ala Ile
 115 120 125
 Leu His Ile Thr Asn Gln Lys Ser Ile Pro Lys Tyr Ser Lys Gly Ser
 130 135 140
 Arg Gly Leu Phe Val Leu Leu Arg Val Asn Ser Ile Phe Thr Ala Thr
 145 150 155 160
 Thr Ile Ser Pro Ser Leu Ser Leu Arg Gln Cys Pro Asp Arg Tyr Thr
 165 170 175
 Ile Arg Ala Gly Arg Asn Leu Pro Asp Lys Glu Phe Arg Tyr Leu Ser
 180 185 190
 Thr Val Ile Val Thr Ala Ala Ile His Gln Gly Leu Gly Ser Met Leu
 195 200 205
 Ser Leu Arg Leu Thr Tyr Pro Phe Asn Leu Leu Ala Leu Gly Arg Arg
 210 215 220
 His Thr Ile Tyr Phe Pro Leu Glu Val Cys Ile Val Leu Cys Phe Cys
 225 230 235 240

<210>1233

<211>133

<212>PRT

<213>Chlamydia pneumoniae

<400>1233

Leu Asn Phe Val Ser Thr Leu Thr Gly Ser Asp Phe Tyr Ala Pro Val

1 5 10 15
 Leu Glu Lys Leu Glu Glu Ala Phe Ala Asp Thr Thr Gly Gln Ala Ile
 20 25 30
 Leu Phe Ser Ser Ser Pro Asp Phe Ile Val His Pro Ile Ala Gln Gln
 35 40 45
 Leu Gly Ile Ser Ser Trp Tyr Ala Ser Cys Tyr Arg Asp Gln Ser Ala
 50 55 60
 Glu Gln Thr Ile Tyr Lys Lys Cys Leu Thr Gly Asp Lys Lys Ala Gln
 65 70 75 80
 Ile Leu Ser Tyr Ile Lys Lys Ile Asn Gln Ala Arg Ser His Thr Phe
 85 90 95
 Ser Asp His Ile Leu Asp Leu Pro Phe Leu Met Leu Gly Glu Glu Lys
 100 105 110
 Thr Val Val Arg Pro Gln Gly Arg Leu Lys Lys Met Ala Lys Lys Tyr
 115 120 125
 Tyr Trp Asn Ile Val
 130

<210>1234

<211>118

<212>PRT

<213>Chlamydia pneumoniae

<400>1234

Val Ile Leu Leu Gln Asn Ile Lys Arg Cys Ser Leu Lys Gln Leu Lys
 1 5 10 15
 Val Leu Ala Thr Leu Leu Leu Ser Leu Ser Leu Pro Thr Leu Glu Ala
 20 25 30
 Ala Glu Asn Arg Asp Ser Asp Ser Ile Val Trp His Leu Asp Tyr Gln
 35 40 45
 Glu Ala Leu Gln Lys Ser Lys Glu Ala Glu Leu Pro Leu Leu Val Ile
 50 55 60
 Phe Ser Gly Ser Asp Trp Asn Gly Pro Cys Met Lys Ile Arg Lys Glu
 65 70 75 80
 Val Leu Glu Ser Pro Glu Phe Ile Lys Arg Val Gln Gly Lys Phe Val
 85 90 95
 Cys Val Glu Val Glu Tyr Leu Lys His Arg Pro Gln Leu Lys Thr Phe
 100 105 110
 Val Ser Lys Ile Leu Leu
 115

<210>1235

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1235

Met Lys Ser Phe Lys Phe Leu Leu Pro Phe Leu Ser Val Ile Leu Cys
 1 5 10 15
 Cys Gly Asn Leu Leu Ser Ser Pro Arg Ser Arg Ala Ile Ser Val Thr
 20 25 30
 Glu Ser Ile Gly Met Ser Ala Val Lys Thr Leu Val Leu Ser Glu Lys
 35 40 45
 Ala His Glu Phe Leu Glu Gly Ile Gly Tyr Gly Val Gly Ala Ser Ser
 50 55 60
 Ile Leu Arg Asp Trp Gln Thr Gln Gln Trp Leu Glu Ile Glu Ser Leu
 65 70 75 80
 Leu Ala Gln Asn Glu Val Met
 85

<210>1236

<211>141

<212>PRT

<213>Chlamydia pneumoniae

<400>1236

Met Gln Tyr Phe Ser Pro Ala Lys Leu Asn Leu Phe Leu Lys Ile Trp
 1 5 10 15
 Gly Lys Arg Phe Asp Asn Phe His Glu Leu Thr Thr Leu Tyr Gln Ala
 20 25 30

Ile Asp Phe Gly Asp Thr Leu Ser Leu Lys Asn Ser Met Lys Asp Ser
 35 40 45
 Leu Ser Ser Asn Val Asn Glu Leu Leu Ser Pro Ser Asn Leu Ile Trp
 50 55 60
 Lys Ser Leu Glu Ile Phe Arg Arg Glu Thr Gln Ile His Gln Pro Val
 65 70 75 80
 Ser Trp His Leu Asn Lys Ser Ile Pro Leu Gln Ser Gly Leu Gly Gly
 85 90 95
 Gly Ser Ser Asn Ala Ala Thr Ala Leu Tyr Ala Leu Asn Glu His Phe
 100 105 110
 Gln Thr His Ile Pro Ile Thr Thr Leu Gln Leu Trp Ala Arg Glu Ile
 115 120 125
 Gly Ser Asp Val Pro Phe Phe Phe Leu Gln Glu Gln His
 130 135 140

<210>1237

<211>174

<212>PRT

<213>Chlamydia pneumoniae

<400>1237

Leu Gly Ser Arg Asn Arg Lys Arg Cys Ser Phe Phe Phe Ser Ser Gly
 1 5 10 15
 Thr Ala Leu Gly Lys Gly Arg Gly Glu His Leu Phe Ser Ile Lys Lys
 20 25 30
 Leu Asn His Lys His Lys Tyr Val Leu Tyr Leu Asp His Gln Gly Ile
 35 40 45
 Pro Thr Glu Lys Ala Tyr Gln Ser Leu Leu Pro Gln Asp Tyr Ser Thr
 50 55 60
 Gly Asn His Asn Ala Cys Phe Tyr Gly Glu Asn Asp Leu Glu Lys Ser
 65 70 75 80
 Val Phe Arg Ile Arg Thr Asp Leu Lys Asn Lys Lys His Met Leu Glu
 85 90 95
 Arg Met Trp Ser Pro Phe Glu Ser His Val Leu Met Ser Gly Ser Gly
 100 105 110
 Ala Thr Leu Phe Val Cys Tyr Leu Glu Glu Leu Glu Gln Asp Ser Lys
 115 120 125
 Val Ser Ser Gln Ile His Ser Leu Ile Lys Gln Thr Gln Gly Ile Pro
 130 135 140
 Val Ser Arg Leu Tyr Arg Glu Pro His Trp Tyr Ser Leu Lys Gln Ser
 145 150 155 160
 Thr Tyr Lys Asn Ser Pro Leu Glu Cys Phe Gln Pro Gln Ile
 165 170

<210>1238

<211>106

<212>PRT

<213>Chlamydia pneumoniae

<400>1238

Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg Val Gln Gly
 1 5 10 15
 Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly Leu Ile Val
 20 25 30
 Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu Tyr Arg Ser
 35 40 45
 Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu Gly Val Ser
 50 55 60
 Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Val Gly Gln Val
 65 70 75 80
 Met Ala Tyr Ala Met Val Leu Ala Lys Gly Met Glu Ile Asp Cys Pro
 85 90 95
 Arg Asn Leu Ala Lys Ser Val Thr Val Glu
 100 105

<210>1239

<211>217

<212>PRT

<213>Chlamydia pneumoniae

<400>1239

Met Ser Asn Lys Val Leu Gly Gly Ser Leu Leu Ile Ala Gly Ser Ala
 1 5 10 15
 Ile Gly Ala Gly Val Leu Ala Val Pro Val Leu Thr Ala Lys Gly Gly
 20 25 30
 Phe Phe Pro Ala Thr Phe Leu Tyr Ile Val Ser Trp Leu Phe Ser Met
 35 40 45
 Ala Ser Gly Leu Cys Leu Leu Glu Val Met Thr Trp Met Lys Glu Ser
 50 55 60
 Lys Asn Pro Val Asn Met Leu Ser Met Ala Glu Ser Ile Leu Gly His
 65 70 75 80
 Val Gly Lys Ile Ser Ile Cys Leu Val Tyr Leu Phe Leu Phe Tyr Ser
 85 90 95
 Leu Leu Ile Ala Tyr Phe Cys Glu Gly Gly Asn Ile Leu Cys Arg Val
 100 105 110
 Phe Asn Cys Gln Asn Leu Gly Ile Ser Trp Ile Xaa Xaa Leu Gly Pro
 115 120 125
 Leu Gly Phe Ala Ile Leu Met Gly Pro Ile Ile Xaa Xaa Gly Thr Xaa
 130 135 140
 Xaa Ile Asp Tyr Cys Xaa Xaa Phe Phe Xaa Xaa Gly Leu Xaa Val Xaa
 145 150 155 160
 Phe Gly Ile Xaa Xaa Ala Leu Gly Phe Leu Lys Ile Gln Pro Ser Phe
 165 170 175
 Met Val Arg Ser Ser Met Val Asn Tyr Asn Lys Arg Ile Ser Cys Val
 180 185 190
 Phe Ser Leu Leu Phe Gly Phe Gln Ser Xaa Ile Pro Thr Leu Tyr Tyr
 195 200 205
 Tyr Met Asp Lys Lys Ser Trp Arg Cys
 210 215

<210>1240

<211>115

<212>PRT

<213>Chlamydia pneumoniae

<400>1240

Leu Val Ser Ser Phe Val Gly Val Ala Leu Gly Val Met Asp Phe Leu
 1 5 10 15
 Ala Asp Gly Leu Lys Trp Asn Lys Lys Ser His Pro Phe Ser Ile Phe
 20 25 30
 Phe Leu Thr Phe Ile Ile Pro Leu Ala Trp Ala Val Cys Tyr Pro Glu
 35 40 45
 Ile Val Leu Thr Cys Leu Lys Tyr Ala Gly Gly Phe Gly Ala Ala Val
 50 55 60
 Ile Ile Gly Val Phe Pro Thr Leu Ile Val Trp Lys Gly Arg Tyr Gly
 65 70 75 80
 Lys Gln His His Arg Glu Lys Gln Leu Val Pro Gly Gly Lys Phe Ala
 85 90 95
 Leu Phe Leu Met Phe Leu Leu Ile Val Ile Asn Val Val Ser Ile Tyr
 100 105 110
 His Glu Leu
 115

<210>1241

<211>105

<212>PRT

<213>Chlamydia pneumoniae

<400>1241

Leu Phe Pro Leu Val Leu Leu Ala Trp Val Ile Arg Tyr Gln Leu His
 1 5 10 15
 Ala Asn Phe His Cys Ser Val Val Pro Phe Pro Gly Phe Ser Val Asn
 20 25 30
 Gln Ala Tyr Lys Cys Ser Glu Ala Lys Ile Glu Glu Met Leu Asp Leu
 35 40 45
 Leu Asp Leu Glu Thr Leu Glu Trp Ser Ser Arg Cys Leu Arg Gln Asp
 50 55 60
 Met Thr Phe Ala Asn Arg Leu Glu Glu Glu Leu Ile Gln Glu Leu Arg

65 70 75 80
 Val Ser Glu Thr Glu Glu Leu Ile Ser Leu Gly Gly Lys Arg Asn Leu
 85 90 95
 Val Arg Leu Leu Leu Thr His Ser Phe
 100 105

<210>1242

<211>158

<212>PRT

<213>Chlamydia pneumoniae

<400>1242

Met Arg Val Ile Phe Pro Asp Lys His Asn Asn Phe Pro Asn Leu Ser
 1 5 10 15
 Lys Leu Leu Lys Lys Leu Pro Ser Val Ile Leu Val Thr Ser Cys Ile
 20 25 30
 Ala Pro Phe Phe Ser Tyr Ile Ile Asn Lys Phe Phe Gly Ile Pro Gly
 35 40 45
 Leu Leu Glu Ile Leu Ala Leu Ser Val Lys Gly Ile Gln Lys His His
 50 55 60
 Phe Trp Gln Phe Leu Thr Tyr Pro Leu Ile Thr Ala Asp Ser Leu Ser
 65 70 75 80
 Leu Asn Lys Asp Gln Ser Phe Glu Ile Thr Gln Arg Leu Leu Leu Arg
 85 90 95
 Asn Val Leu Asp Phe Phe Leu Phe Tyr Lys Ala Ile Gln His Leu Ile
 100 105 110
 Arg Lys Leu Gly Ala Phe Ser Val Leu Val Val Ile Ser Gly Gln Ala
 115 120 125
 Leu Ile Ile Gly Ala Val Leu Trp Gly Phe Met Ala Leu Ile Thr Ala
 130 135 140
 Pro Asn Leu Ser Ser Val Arg Lys Val Leu Ser Val Val Phe
 145 150 155

<210>1243

<211>135

<212>PRT

<213>Chlamydia pneumoniae

<400>1243

Met Arg Leu Lys Asn Tyr Pro Met Ile Gln Phe Ser Phe Phe Leu Pro
 1 5 10 15
 Gln Thr Cys Ile Leu Leu Leu Ala Ser Asp Ser Leu Thr Asn Ile Leu
 20 25 30
 Ala Leu His His Leu Leu Ala Asn Tyr Ser Val Lys Gln Arg Met Leu
 35 40 45
 Val Leu Leu Arg Glu Ser Phe Ala Phe Ile Ala Met Phe Ala Leu
 50 55 60
 Tyr Gly Leu Ala Leu Gly Gly Leu Lys Val Leu Asn Thr Pro Val Cys
 65 70 75 80
 Ala Ile Glu Val Val Gly Gly Ile Ala Val Thr Leu Ala Gly Val Arg
 85 90 95
 Ala Val Leu Arg Leu Gly Lys Glu Glu Ser Trp Ile Pro Tyr Lys Phe
 100 105 110
 Asn Met Ser Pro Ser Tyr Ser Pro Cys Ile Ser Pro Ile Ala Leu Pro
 115 120 125
 Leu Met Phe Gly Pro Ser Gly
 130 135

<210>1244

<211>160

<212>PRT

<213>Chlamydia pneumoniae

<400>1244

Met Lys Lys Lys Phe Ile Phe Tyr Phe Val Ile Val Phe Ser Leu Leu
 1 5 10 15
 Phe Leu Trp Glu Met Thr Ser Arg His Arg Pro Thr Phe Ser Phe Phe
 20 25 30
 Cys Pro Pro Pro Ser Ser Ile Ala Ser Ser Thr Leu Gln Ser Leu Pro
 35 40 45

Leu Leu Leu Thr Ser Ala Trp His Thr Leu Lys Ala Ile Leu Gly Gly
 50 55 60
 Phe Phe Leu Ala Ile Thr Leu Ser Ile Val Leu Ala Thr Ile Met Leu
 65 70 75 80
 Ser Tyr Lys Ser Ala Lys Asp Leu Leu Gln Pro Leu Phe Ile Leu Leu
 85 90 95
 Gln Cys Thr Pro Met Phe Ala Leu Ala Pro Leu Ile Val Leu Trp Phe
 100 105 110
 Gly Trp Gly Ile Gly Ala Val Ile Val Pro Thr Ala Leu Thr Ile Phe
 115 120 125
 Phe Pro Leu Thr Leu Thr Ile Tyr Gln Gly Ile Leu Ser Thr Pro Glu
 130 135 140
 Glu Leu Ile Glu Gln Phe Val Leu Cys Gly Val Gln Asn Ser Asn Ser
 145 150 155 160

<210>1245

<211>227

<212>PRT

<213>Chlamydia pneumoniae

<400>1245

Met Leu Trp Gly Val Ser Met Arg Gln Ser Phe Asp Glu Leu Ser Gln
 1 5 10 15
 Asn Ala Phe Lys Asn Ile Phe Asn Lys Gln Arg Phe Cys Phe Ile Phe
 20 25 30
 Cys Ser Leu Cys Cys Phe Gly Phe Val Phe Ala Leu Phe Leu Lys Leu
 35 40 45
 Cys Ser Arg Leu Ala Pro Glu Ile Ser Leu Ser Thr Leu Gly Leu Gly
 50 55 60
 Ala Phe Phe Cys Ala Phe Ser Val Ile Cys Ala Ser Ala Ile Ile Val
 65 70 75 80
 Gln Phe Leu Leu His Lys Glu Ser Gln Gly Glu Thr Ser Lys Leu Cys
 85 90 95
 Cys Ala Ile Lys Asn Thr Trp Ser Ser Leu Trp Leu Ser Leu Leu Val
 100 105 110
 Ser Met Pro Phe Phe Ile Ala Met Val Ala Val Val Thr Val Ala Met
 115 120 125
 Leu Ser Ser Phe Leu Gly Ser Leu Pro Trp Val Gly Lys Leu Phe His
 130 135 140
 Thr Val Leu Ile Phe Ile Pro Tyr Leu Ser Ala Thr Ala Leu Ile Leu
 145 150 155 160
 Leu Phe Leu Gly Ser Phe Ser Cys Leu Phe Phe Cys Ile Pro Val Leu
 165 170 175
 His Asn Gln Glu Ser Ile Asp Tyr Arg Lys Leu Pro Arg Val Phe Ser
 180 185 190
 Trp Glu Tyr Pro Ser Ala Val Tyr Arg Gly Gly Asp Cys Phe Gly Ser
 195 200 205
 Xaa Ser Pro Met Gln Leu Val Ser Phe Arg Phe Phe Leu Phe Asp Asp
 210 215 220
 Thr Ser Cys

225

<210>1246

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1246

Val Val Ile Ala Leu Val Pro Leu Ala Leu Cys Ser Trp Leu Ala Leu
 1 5 10 15
 Asp Ser Phe Tyr Leu Met Thr His Leu Val Glu Ile Ala Asp Ile His
 20 25 30
 Thr Trp Ser Phe Leu Ala Gln Met Phe Val Leu Ile Val Pro Ile Ala
 35 40 45
 Leu Ile Leu Thr Pro Ala Val Ser Phe Phe Phe Asn Phe Ser Phe Ser
 50 55 60
 Phe Tyr Leu Ala Lys Gln Glu Glu Glu Lys Ala Leu Val Lys
 65 70 75

<210>1247

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1247

```

Leu Arg Ala Phe Phe Pro Val Lys Ala Trp Arg Ser Pro Glu Asp Ile
 1           5           10           15
Pro Glu Ala Pro Ser Pro Lys Gly Ile Gly Ser Lys Arg Ser Ile Val
           20           25           30
Ala Val Pro Trp Glu Trp Arg Ser Arg Cys Gln Val Thr Glu Ser Pro
           35           40           45
Ala Tyr Pro Ala Pro Lys Thr Ala Ile Arg Ile Lys Cys Thr Leu Asn
           50           55           60
Gln Val Ser Leu His Arg Pro Cys Leu Glu Asn Lys Arg Ile Arg Asp
           65           70           75           80
Lys Arg Thr Gly Gly Asn Leu Ser Asp Trp Glu Ile Lys Met
           85           90

```

<210>1248

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>1248

```

Met Arg Ile Ala Val Leu Gly Ala Gly Tyr Ala Gly Leu Ser Val Thr
 1           5           10           15
Trp His Leu Leu Leu His Ser Gln Gly Thr Ala Thr Ile Asp Leu Phe
           20           25           30
Asp Pro Ile Pro Leu Gly Glu Gly Ala Ser Gly Met Ser Ser Gly Leu
           35           40           45
Leu His Ala Phe Thr Gly Lys Lys Ala Leu Lys Pro Pro Leu Val Gly
           50           55           60
Ser Arg Asn Gln Cys Tyr Thr Arg Val Asn His Xaa Ala Leu Val Lys
           65           70           75           80
Pro Ser Thr Tyr Leu Leu
           85

```

<210>1249

<211>232

<212>PRT

<213>Chlamydia pneumoniae

<400>1249

```

Leu Pro Met Asn Thr Ser His Arg Lys Thr Leu Val Phe Ser Tyr Leu
 1           5           10           15
Ser Ser Thr Phe Thr Leu Leu Leu Val Leu Ser Asn Leu Val Leu Ser
           20           25           30
Ser Lys Leu Ile Pro Thr Thr Phe Phe Asn Phe Ile Ile Pro Gly Gly
           35           40           45
Leu Ile Leu Tyr Pro Leu Thr Phe Leu Ile Ser Asp Val Val Asn Glu
           50           55           60
Ile Phe Gly Pro Lys Lys Ala Arg Val Met Ile Phe Ser Ala Phe Ile
           65           70           75           80
Ala Asn Leu Leu Ala Ser Ser Ile Val Gln Ile Phe Met Phe Phe Pro
           85           90           95
Val Ala Ser Pro Glu Met Gln Thr Ala Trp His Cys Leu Phe Asp Leu
           100           105           110
Ser Pro Leu Arg Phe Leu Ala Ser Leu Leu Ala Phe Ile Val Ser Gln
           115           120           125
Gln Leu Asp Ile Val Leu Tyr Thr Phe Phe Lys Asn Arg Thr Pro Asn
           130           135           140
Ser Ser Leu Trp Leu Arg Ser Asn Gly Ser Thr Trp Ile Ser Gln Xaa
           145           150           155           160
Pro Asp Thr Phe Ile Val Asp Thr Cys Ile Leu Tyr Phe Gly Met Gly
           165           170           175
Leu Ser Phe Pro Gln Thr Leu Asn Ile Met Phe Tyr Ser Tyr Ile Tyr
           180           185           190
Lys Ile Thr Phe Cys Val Leu Thr Thr Pro Leu Phe Tyr Leu Ala Val

```

195 200 205
 Asn Thr Ile Arg Lys Phe Leu Gly Met Pro Ser Thr Lys Ile Ala Asn
 210 215 220
 Thr Val Pro Leu Ile Asn Gln Pro
 225 230
 <210>1250
 <211>103
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1250
 Met Thr Pro Lys Ser Ile Gln Gln Leu His Leu Ile Lys Thr Ile Asp
 1 5 10 15
 Pro Val Arg Lys Ile Ser Pro Val Thr Thr Lys Lys Ser Ser Phe Phe
 20 25 30
 Arg Gln Ser Leu Leu Arg Phe Leu Glu Leu Phe Trp Met Phe Leu Tyr
 35 40 45
 Cys Ile Arg Ser Ile Arg Phe His Cys Val His Ile Ala Thr Phe Ile
 50 55 60
 Cys Arg Gly Leu Ile Leu Phe Leu Thr Thr Leu Phe Leu Ser Met Ile
 65 70 75 80
 Cys Ile Leu His Phe Ile Thr Leu Pro Trp Ile Cys Lys Glu Asp Pro
 85 90 95
 Arg Ile Ile Arg Lys Asn Lys
 100
 <210>1251
 <211>79
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1251
 Leu Asn Phe Ala Lys Ile Asp His Asn His Leu Tyr Leu Thr Cys Leu
 1 5 10 15
 Gly Asp Leu Gly Val Ala Cys Pro Ile Leu Ser Thr Asp Cys Leu Pro
 20 25 30
 Asn Tyr Ser Glu Lys Ala Ser His Glu Val Leu Val Tyr Ser Lys Phe
 35 40 45
 Arg Cys Ile Ser Gly Glu Pro Ser Arg Leu Ala Thr Ser Gly Asn Asp
 50 55 60
 Thr Tyr Tyr Ser Ile Val Ser Leu Pro Ile Gly Leu Arg Tyr Glu
 65 70 75
 <210>1252
 <211>85
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1252
 Met Val Glu Ile His His Lys Asp Pro Ser Leu Lys Lys Leu Phe Ala
 1 5 10 15
 Leu Gln Gln Ser Leu Glu Thr Leu Asn Ser Leu Ser Asp Ile Val Ala
 20 25 30
 Thr Tyr Glu Ala Met Phe Ser Leu Ile Tyr Glu Gly Leu Asn Lys Ala
 35 40 45
 Leu Arg Lys Asp Gln Leu Cys Tyr Leu Leu Ser Val Asn Ser Lys Gly
 50 55 60
 Glu Leu Leu Lys Ser Pro Ser Gly Asp Pro Ile Val Gln Thr Phe Pro
 65 70 75 80
 Ile His Pro His His
 85
 <210>1253
 <211>75
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1253
 Met Glu Glu Val Pro Phe Glu Asn Ala Met Gln Arg Leu Glu Glu Ile
 1 5 10 15
 Val Asp Leu Met Asn Gln Pro Thr Thr Ser Leu Asp Ala Ser Leu Ala

20 25 30
 Leu Tyr Glu Glu Ala Asp Ala Leu Met Arg Ile Cys Glu Ser Arg Ile
 35 40 45
 Arg Gln Val Glu Gln Arg Val Arg Glu Leu Ala Glu Lys Arg His Glu
 50 55 60
 Ser Ser Leu Phe Glu Glu Gln Ala Val Val Arg
 65 70 75

<210>1254

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>1254

Met Tyr Ile Ser Ser Ser Phe Ser Ser Ser Ala Lys Val Ser Ala Ile
 1 5 10 15
 Cys Leu Ala Ser Ile Cys Ser Lys Val Ser Ser Arg Phe Leu Ser Asn
 20 25 30
 Asn Ile Asn Pro Lys Thr Asn Arg Thr Thr Pro Arg Glu Ile Val Leu
 35 40 45
 Ile Pro Asn Pro Gln Thr Met Ser Ala Leu Asn Pro Glu Ile Thr Pro
 50 55 60
 Leu Ser Thr Ile Ala Pro Gln Thr Thr Arg Arg Met Pro Thr Thr Asn
 65 70 75 80
 Lys Val Ile Pro Arg Ala Arg Asp Leu Leu Ser Leu Gly Ile Thr Asn
 85 90 95
 Phe Val Ser Ser Gly Gly Val Gly Asp Thr Cys Arg Ile Ala Gly Ala
 100 105 110
 Ala Val Met Ile Glu Tyr Gln Asn His Lys Arg Asn Ile Asp
 115 120 125

<210>1255

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1255

Met Glu Ser Lys Lys Val Ser Lys Leu Ala Ser Asn Ser Thr Phe Phe
 1 5 10 15
 Leu Ala Ser Val Ser Cys Leu Gly Ser Thr Val Pro Pro Tyr Arg Ala
 20 25 30
 Leu Arg Ser Leu Thr Arg Val Ser Thr Ser Ser Cys Phe Phe Arg Lys
 35 40 45
 Asn Phe Val Leu Ala Ser Ser Arg Arg Ser Thr Lys Ser Asp Lys Ser
 50 55 60
 Phe Leu Phe Ala Ser Val Asp Ser Phe Glu Leu Ser Ser Arg Ser Phe
 65 70 75 80
 Ser

<210>1256

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1256

Leu Leu Gly Met Cys Thr Leu Leu Leu Ile Pro Lys Gln Leu Arg Leu
 1 5 10 15
 Leu Ile Leu Thr Lys Cys Leu Ser Ile Thr Leu Ser His Thr Leu Ile
 20 25 30
 His Thr Arg Leu Gln Gly Ser Lys Cys Leu Phe Lys Gly Arg Leu Arg
 35 40 45
 His Thr Ile Asn Met Pro Ile Lys Ser His Gly Tyr Leu Pro Tyr Val
 50 55 60
 Thr Ser Arg Ser His Lys Ala Ile His Asn Leu Thr Ser Arg Phe Leu
 65 70 75 80

<210>1257

<211>87

<212>PRT

<213>Chlamydia pneumoniae

<400>1257

Gly Ser Thr Phe Ala Asn Leu Ser Leu His Leu Leu Tyr Cys Thr Lys
 1 5 10 15
 Ala Leu Val Asn Ala Cys Phe Ile Gly Trp Ser Gly Arg Ser Ala Ile
 20 25 30
 Arg Ser Ile Ile Ser Ile Ser Ser Thr Arg Gly Arg Val Ser Ser Ile
 35 40 45
 Ser Ser His Lys Thr Leu Arg Arg Phe Ala Ala Ser Glu Ser Met Val
 50 55 60
 Tyr Ser Ile Ser Ser Val Ala Ser Leu Ser Thr Pro Lys Ala Lys Val
 65 70 75 80
 Ser Ala Phe Asp Asn Leu Leu
 85

<210>1258

<211>81

<212>PRT

<213>Chlamydia pneumoniae

<400>1258

Met His Pro His Ser Lys Cys Arg Phe Leu Gly Phe Ser Cys Phe Lys
 1 5 10 15
 Lys Leu Ser Ile Ala Gly Thr Asn Val Leu Leu Ile Lys Glu Asp Phe
 20 25 30
 Pro Asp Pro Glu Thr Pro Val Thr Pro Ile Ser Arg Ala Asn Gly Arg
 35 40 45
 Arg Ile Glu Arg Phe Leu Arg Leu Trp Ile Val Ala Ser Val Ser Lys
 50 55 60
 Ser Gln Asp Val Gly Ala Ser Arg Asp Ser Gly Met Gly Met Val Ser
 65 70 75 80
 Ser

<210>1259

<211>107

<212>PRT

<213>Chlamydia pneumoniae

<400>1259

Met Ile Ala Pro Ser Leu Pro Ala Leu Leu Ala Ile Cys Phe Asn Gly
 1 5 10 15
 Ala Val Asn Ala Phe Arg Ile Ile Arg Val Pro Ile Ala Ser Ser Ser
 20 25 30
 Phe Ala Ser Ile Gly Arg Lys Ala Ser Ser Val Gly Ile Gln Arg Thr
 35 40 45
 Lys Ala Val Pro Pro Pro Gly Arg Ile Pro Ser Ser Thr Ala Ala Met
 50 55 60
 Val Ala Cys Cys Ala Ser Thr Leu Ser Phe Phe Ser Phe Ile Ser
 65 70 75 80
 Ile Ser Val Ala Ala Pro Thr Arg Ile Thr Ala Thr Pro Pro Glu Ser
 85 90 95
 Leu Ala Lys Arg Ser Trp Ser Phe Ser Leu Ser
 100 105

<210>1260

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1260

Leu Pro Pro Ala Leu Gln Val Leu Tyr Met Lys Ser Leu Asp Asn Ala
 1 5 10 15
 Asn Leu Glu Ile Leu His Lys Ile Phe Gln Val Gln Val Glu Ala Asn
 20 25 30
 Glu Leu Pro Leu Gln Met Leu His Glu Thr Thr Pro Lys Ala Leu Leu
 35 40 45
 Gln Gly His Ala Ala Phe Ser Asp Gln Asn Glu Leu Leu Glu Ile Ser
 50 55 60
 Tyr Thr Tyr His Lys Leu Thr Ser Tyr Lys Glu Ala
 65 70 75

<210>1261

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1261

```

Met Cys Asn Arg Cys Lys Asp Ser Ser Thr Ser Leu Val Phe Ser Thr
 1           5           10           15
Cys Leu Gly Thr His Lys Thr Glu Thr Pro Ser Phe Ile Asn Phe Cys
           20           25           30
Thr Thr Gly Ser His Phe Pro Ala Ser Leu Leu Cys Ile Glu Pro Arg
           35           40           45
Ile Thr Asn Phe Glu Ser Val Gly Asn Leu Lys Arg Ser Leu Gln Val
           50           55           60
Ser Leu Ser Lys Cys Ser Ala Val Cys Ala Ala Thr
           65           70           75

```

<210>1262

<211>80

<212>PRT

<213>Chlamydia pneumoniae

<400>1262

```

Met Leu Asn His Gln Gln His Lys Val Val Ser Ile Ser Gln Phe His
 1           5           10           15
Gln Gln Arg Gln Leu Val His Lys Lys Asn Trp Arg Arg Gly Ser Thr
           20           25           30
Thr His Lys Glu Cys Ala Thr Asp Ala Lys Ile Leu Gln His Pro Trp
           35           40           45
Ser Phe Gln Arg Val Leu Ala Pro Ile Lys Leu Arg Pro Pro Leu Leu
           50           55           60
Leu Ile Ser Ala Leu Gln Glu Ala Ile Phe Leu His His Phe Tyr Ala
           65           70           75           80

```

<210>1263

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1263

```

Met Ile Arg Leu Trp Ser Cys Ser Ser Ile Lys Ile Glu Thr Val Pro
 1           5           10           15
Tyr Ser Lys Glu Ile Ala Tyr Cys Arg Trp Tyr Ser Asn Thr Thr Leu
           20           25           30
Ser Tyr Trp Ile Leu Ile Arg Glu Lys Cys Arg Pro Thr Lys Lys Ser
           35           40           45
Ala Ser Ser Arg Phe Leu Thr Lys Asn Asn Asn Ile Val His His Met
           50           55           60
Ser Ser Gln Lys Leu Phe Ala Phe Gln Ala Lys Ile Phe Val Ala Phe
           65           70           75           80
Phe Phe Gln Lys Asn Ile Phe Tyr Gln Phe Phe Phe Phe Arg Met Thr
           85           90           95
Cys Lys Val Lys Arg Ser Ile Phe Gln Glu Glu Phe Cys Arg Pro Ile
           100           105           110

```

<210>1264

<211>148

<212>PRT

<213>Chlamydia pneumoniae

<400>1264

```

Ser Gly Arg Ile Ile Ser Val Met Leu Ser Ala Pro Pro Cys Glu Leu
 1           5           10           15
His Ser Asp Leu Ile Asp Pro Asp Leu Phe Glu Phe Asn His Arg Leu
           20           25           30
Asn Ile Cys Ile Ser Ala Glu Val Arg Gly Arg Val Thr Thr His Thr
           35           40           45
Phe Arg Gly Asp Ser Cys Asn Met Ser Phe Asn Cys Ser Val Arg Gly
           50           55           60
Asn Val Ile Thr Ile Pro Arg Ile Ile Arg Ile Glu Ile Arg Ser Leu
           65           70           75           80

```

Thr Ser Ser Phe Ser Ile Ile Thr Lys Cys Lys Arg Ile Ser Arg
 85 90 95
 Leu Arg Ile Thr Asn Ile Ile Ala Tyr Trp Ser Leu Arg Tyr Val Cys
 100 105 110
 Leu Arg Ile Asp Ile Lys Thr Val Arg Glu Cys Ser Ser Ile Lys Leu
 115 120 125
 Arg Thr Phe Arg Arg His Ile Thr Leu His Asn Lys Phe Thr Trp Arg
 130 135 140
 Ser Arg Gly Ile
 145
 <210>1265
 <211>130
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1265
 Ser Phe Phe Ser Phe Arg Lys Val Pro Asn Phe Ser Asn Gln Pro Met
 1 5 10 15
 Cys Phe Leu Ile Arg Ser Cys Trp Ser Ala Ser Ile Asn Ala Trp Arg
 20 25 30
 Gly Asp Arg Phe Cys Asp Ser Ser Leu Ser Asn His Asp His Met Val
 35 40 45
 Cys Asn Arg Asn Met Pro Ser Asn Ser Gly Leu Pro Ser Asn Asp Asp
 50 55 60
 Met Phe Thr Asn Phe Cys Arg Thr Cys Asn Ala Cys Leu Gly Asn Asn
 65 70 75 80
 Asn Thr Met Leu Ser Asn Phe Tyr Val Met Ser Tyr Leu Tyr Leu Val
 85 90 95
 Ile Tyr Phe Ser Ser Phe Met Asp His Gly Val Leu Glu Ser Thr Thr
 100 105 110
 Ile Tyr Arg Ser Val Gly Ser Asp Phe Tyr Ile Ile Thr Tyr Asn His
 115 120 125
 Ile Ala
 130
 <210>1266
 <211>78
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1266
 Glu Ala Val Phe Val Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile
 1 5 10 15
 Phe Val Pro Leu Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln
 20 25 30
 Ile Leu Leu Asp Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu
 35 40 45
 Thr Val Cys Trp Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Phe
 50 55 60
 Phe Leu His Phe Ser Tyr Ile Phe Ala Tyr Cys Gly Trp Asp
 65 70 75
 <210>1267
 <211>74
 <212>PRT
 <213>Chlamydia pneumoniae
 <400>1267
 Leu Cys Thr Asp Ser Thr Ser Ile Ser Cys Cys Ser Ile Ile Ile Glu
 1 5 10 15
 Gly Cys Asn Ser Trp Val Val Phe Tyr Arg Thr Thr Asn Ala Ile Asp
 20 25 30
 Ser Pro Ser Arg Gly Met Val Ser Arg Asp Val Arg Phe His Gly Lys
 35 40 45
 Ile Ile Val Glu Asp His Arg Thr Gly Ile Leu Cys Lys Asn Ala Leu
 50 55 60
 Leu Met Tyr Ser Tyr Cys Thr Thr Gln Thr
 65 70
 <210>1268

<211>90

<212>PRT

<213>Chlamydia pneumoniae

<400>1268

```

Met Gly Ala Glu Ile Glu Ile Ser Gly Val Leu Asp Ser Glu Leu Ser
 1           5           10           15
Leu Val Leu Ala Pro Cys Leu Cys Ala His Pro Thr Lys Ala Phe Ile
           20           25           30
Asn Gly Glu Ser Ser Arg Gly Leu Pro Phe Leu Arg Gly Thr Ser Cys
           35           40           45
Gly Glu Pro Val Leu Ser Val Ser Ser Ile Ser Glu Gly Asp Pro Thr
           50           55           60
Asp Ile Glu Ser Ser Ser Glu Glu Val His Ser Ser Pro Arg His Val
           65           70           75           80
Gln Gln Arg Pro Thr Ala Ser Ala Ala Ala
           85           90

```

<210>1269

<211>184

<212>PRT

<213>Chlamydia pneumoniae

<400>1269

```

Phe Phe Val Phe Thr His Val Trp Tyr Leu Ile Ser Arg Gly Tyr Phe
 1           5           10           15
Tyr Ser Leu Phe Ser Leu Gly Val Gly Ala Leu Ala Thr Leu Thr Leu
           20           25           30
Ala Thr Arg Ile Gly Arg Ser Pro Ile Leu Tyr Pro Phe Ala Asn Ser
           35           40           45
Ser Lys Ile Val Pro Ser Gly Thr Ser Glu Val Ser Ser Val Cys Thr
           50           55           60
Ala Ser Cys Arg Lys Gly Leu Asn Phe Trp Pro Ile Glu Glu Tyr Ser
           65           70           75           80
Ile Ile Pro Phe Ser Ser Lys Ile Cys Leu Asn Trp Leu Arg Ile Met
           85           90           95
Leu Asn Pro Arg Ala Gln Phe Phe Thr Ser Ser Asp Ile Cys Val Ala
           100           105           110
Asn Pro Arg Ala Phe Ser Met Leu Ser Met Gly Leu Arg Lys Ser Ile
           115           120           125
Lys Val Phe Ser Lys Ala Tyr Cys Ile Ser Ser Trp Arg Ser Phe Cys
           130           135           140
Lys Arg Phe Leu Glu Phe Ser Asp Ser Ala Arg Ala Met Arg Tyr Leu
           145           150           155           160
Ser Phe Phe Ser Phe Asn Ser Val Phe Arg Val Thr Ile Ser Cys Cys
           165           170           175
Lys Cys Ser Thr Ser Phe Ser Phe
           180

```

<210>1270

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>1270

```

Leu Ile Ser Val Glu Glu Thr Pro Glu Ser Ser Ile Phe Ala Phe Ser
 1           5           10           15
Ala Ala Ser Leu Ser Leu Cys Lys Ala Ile Leu Ser Leu Leu Arg Ser
           20           25           30
Met Pro Ser Cys Phe Leu Asn Ser Ser Ile Ile His Leu Ile Met Thr
           35           40           45
Ser Ser Lys Ser Ser Pro Pro Arg Arg Val Ser Pro Phe Val Asp Arg
           50           55           60
Thr Ser Lys Thr Pro Ser Pro Ile Ser Arg Met Glu Ile Ser Lys Val
           65           70           75           80
Pro Pro Pro Arg Ser Lys Thr Ala Ile Phe Leu Ser Pro Thr Leu Ser
           85           90           95
Ile Pro

```


<210>1271

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1271

Phe Leu Lys Thr Met Thr Lys Gly Phe Ala Phe Cys Ser Ala Ser Phe
 1 5 10 15
 Pro Ile Ala Ile Ile Glu Asn Val Val Ser Lys Ser Val Glu Gly Val
 20 25 30
 Ser His Pro Glu Gly Glu Asn Ala Asn Pro Ser Leu Leu Ser Leu Val
 35 40 45
 Met Ala Ser Trp Thr Leu Gly Gly Thr Ser Thr Ser Ser Leu Asn Lys
 50 55 60
 Ala Leu Ala Lys Val Leu Ile Ser Ser Gly Asp Val Phe Pro
 65 70 75

<210>1272

<211>122

<212>PRT

<213>Chlamydia pneumoniae

<400>1272

Met Thr Thr Gly Ser Cys Ser Pro Ser Lys Ala Leu Phe Val Cys Ile
 1 5 10 15
 Asn Cys Ile Ala Phe Ile Glu Met Ser Thr Asn Thr Thr Glu Ala Ala
 20 25 30
 Pro Arg Leu Arg Ala Ser Lys Pro Ile Ala Pro Ile Pro Ala Lys Arg
 35 40 45
 Ser Lys Lys Ala Ala Pro Ser Ile Ser Ser Leu Gln Ile Leu Lys Asn
 50 55 60
 Ala Ser Phe Thr Lys Pro Glu Val Gly Arg Ile Cys Gly Leu Glu Asn
 65 70 75 80
 Val Phe Lys Asp Phe Pro Leu Tyr Leu Pro Ala Lys Ile Leu Thr Ser
 85 90 95
 Pro Leu Glu Glu Gln Ser Leu Arg Asn Gln Gln Pro Leu Val Cys Ser
 100 105 110
 Gly Ser Leu Gly Tyr Tyr Arg Ile His Leu
 115 120

<210>1273

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1273

Phe Thr Phe Phe Phe Leu Ala Gln Leu Glu Lys Gln Leu Pro His Leu
 1 5 10 15
 Val Leu Phe Phe Phe Phe Ser Ala Thr Ser Ser Leu Arg Ala Ser Phe
 20 25 30
 Ile His Ser Ser Leu Trp Ser Arg Val Phe Ser Ser Ser Phe Leu Arg
 35 40 45
 Phe Ala Lys Phe Thr Ser Ala Phe Ser Ser Ser Leu Glu Ala Ala Ser
 50 55 60
 Thr Thr Ser Phe Cys Leu Thr Phe Ser Ser Ser Ser Glu Ser Cys
 65 70 75 80
 Thr Ala Thr Thr Leu Met Tyr Asp Phe Ile Cys Lys Thr Ala Ser Leu
 85 90 95
 Val Val Pro Ser Ser Asn Lys Ser Arg Ser Cys Trp Ile Phe Cys Ile
 100 105 110

<210>1274

<211>82

<212>PRT

<213>Chlamydia pneumoniae

<400>1274

Leu Ser Ala Lys Leu Met Lys Thr Ser Leu Gly Val Cys Val Gly Ile
 1 5 10 15
 Ala Gly Ile Ser Lys Gly Arg Cys Leu Ile Asn Ala Lys Ser Pro Phe
 20 25 30

Ser Leu Lys Ile Ser Glu Arg Ser Glu Arg Glu Arg Val Trp Arg Ser
 35 40 45
 Tyr Val Tyr Ser Val Asp Val Gly Pro Gly Val Phe Leu Met Met Thr
 50 55 60
 Ser Lys Arg Glu Arg Leu Phe Pro Arg Arg Ile Ala Val Thr Thr Pro
 65 70 75 80
 Glu Thr

<210>1275

<211>134

<212>PRT

<213>Chlamydia pneumoniae

<400>1275

Met Asn Ser Pro Thr Ile Lys Asp Pro Ser Leu Glu Thr Ala Cys Ala
 1 5 10 15
 Asp Asp Leu Leu Ala Pro Gly Ile Leu Glu Ser Arg Cys Cys Ser Pro
 20 25 30
 Ser Phe Gln Tyr Thr Ala Leu Ala Ile Ser Ser Leu Pro Met Ala Ser
 35 40 45
 Pro Thr Ile Thr Glu Pro Ser Ser Glu Ala Ser Gln Ala Gln Glu Cys
 50 55 60
 Arg Ser Ser Gly Lys Leu Gly Arg Thr Thr Ile Pro Val Ser Ser His
 65 70 75 80
 Phe Thr Ala Lys Phe Val Ser Val Ser Ser Leu Tyr Arg His Pro Thr
 85 90 95
 Ile Val Phe Pro Ser Leu Glu Thr Pro Ser Ala Lys Asp Cys Ile Pro
 100 105 110
 Ser Glu Asn Ile Pro Arg Ser Thr Ser Ala Pro Phe Thr His Phe Thr
 115 120 125
 Ala Arg Gln Asp Gly Ser
 130

<210>1276

<211>84

<212>PRT

<213>Chlamydia pneumoniae

<400>1276

Met Arg Ser Trp Thr Arg Trp Thr Arg Cys Gly Ser Cys Cys Arg Cys
 1 5 10 15
 Ser Gly Ser Trp Arg Cys Ser Arg Ser Cys Cys Arg Asn His Gly Ser
 20 25 30
 Asn Thr Asn Tyr Ser Ser Ser Cys Cys Pro Ser Gly Glu Thr Ser Cys
 35 40 45
 Tyr His Ser Cys Gln Thr Ser Asp His Arg Gly Tyr Lys Ser Gly Cys
 50 55 60
 Gln Ile Trp Asn Lys Ser Ile Tyr Gln Asn Phe Ser Gln Ser Asp Cys
 65 70 75 80
 Gln Ser His Phe

<210>1277

<211>76

<212>PRT

<213>Chlamydia pneumoniae

<400>1277

Met Arg Glu Phe Ser Cys Ile Lys Asp Arg Lys Asn Arg Cys Phe Arg
 1 5 10 15
 Ala Ala Ala Val Lys Ile Met Cys Thr Pro Ser Arg Ser Ser Ala Arg
 20 25 30
 Thr Thr Arg Pro Lys Glu Val Lys Lys Arg Thr Ser Leu Glu Tyr Ile
 35 40 45
 Gln Ser Ile Trp Asp Leu Gly Pro Leu Asp Val Tyr Ser Cys Phe Ser
 50 55 60
 Lys Glu Thr Ser Ser Glu Leu Tyr Ala Lys Arg Phe
 65 70 75
 <210>1278

<211>78

<212>PRT

<213>Chlamydia pneumoniae

<400>1278

```

Met Met Ile Val Arg Cys Cys Phe Arg Ala Leu Leu Cys Phe Ser Met
 1             5             10             15
Cys Ser Arg Thr Ser Arg Pro Arg Ser Pro Ile Lys Ala Ile Thr Leu
             20             25             30
Ile Val Asp Phe Asp Pro Lys Ala Ile Ala Glu Ser Ser Glu Asp Phe
             35             40             45
Pro Leu Pro Gly Ser Glu Lys Thr Pro Ile Arg Cys Pro Phe Pro Lys
             50             55             60
Val Arg Asn Ala Ser Ile Ala Leu Ile Pro Val Gly Lys Ile
             65             70             75

```

<210>1279

<211>86

<212>PRT

<213>Chlamydia pneumoniae

<400>1279

```

Met Arg Arg Ile Phe Pro Thr Ser Ile Leu Leu Ile Ala Thr Phe Cys
 1             5             10             15
Lys Leu Pro Ser Ser Lys Thr Ser Gln Pro Val Val Gly Ala Ser Cys
             20             25             30
Phe Lys Glu Thr Lys Val Leu Phe Ala Phe Pro Asp Thr Ile Cys Pro
             35             40             45
Asn Ala Ser Glu Ile Ala Asn Lys Thr Arg Ser Lys Ala Pro Ser Lys
             50             55             60
Ala Pro Pro Ile Lys Ile Glu Pro Lys Gly Ala Asp Val Ile Lys Ile
             65             70             75             80
Ser Met Phe Thr Thr Phe
                        85

```

<210>1280

<211>124

<212>PRT

<213>Chlamydia pneumoniae

<400>1280

```

Val Lys Gly Val Leu Lys Arg Gln Arg Leu Ser Leu Thr Met Gly Gly
 1             5             10             15
Arg Ser Lys Leu Lys Arg Arg Ser Trp Leu Lys Ala Ala Gln Thr Thr
             20             25             30
Pro Val Val Cys Trp Arg Arg Asn Val Ile Phe Ser Thr Val Ile Phe
             35             40             45
Ser Pro Ala Ile Ile Arg Ser Pro Ser Ser Ser Leu Glu Ala Ser Ser
             50             55             60
Thr Thr Ile Thr Asn Phe Pro Ala Leu Lys Ser Ser Ile Ala Arg Ser
             65             70             75             80
Lys Glu Thr Lys Phe Ala Glu Pro Thr Ser Ser Arg Val Ser Ile Ile
             85             90             95
Asp Ser Leu Ala Leu Thr Asp Ser Asp Ala Lys His Ala Thr Leu Lys
             100             105             110
Ile Leu Ser Phe Gln Phe Leu Met Gly Ser Lys Thr
             115             120

```

<210>1281

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1281

```

Ile Gln Arg Thr Leu Cys Leu Leu Phe Phe Lys Lys Phe Ile Leu Leu
 1             5             10             15
Ile Leu Val Arg Thr Leu Arg Phe Pro Ile Leu Thr Phe Leu Ser Trp
             20             25             30
Leu Asn Phe Arg Leu Lys Leu Ile Phe Ser Leu Ile Leu Tyr Gly Leu
             35             40             45
Ala Asn Val Ala Gln Leu Val Arg Ala Ser Asp Cys Gly Ser Glu Gly

```

50 55 60
 Arg Gly Phe Lys Pro Arg Arg Ser Pro Ser Leu Ser Ser Leu Phe Leu
 65 70 75 80
 Leu Phe Phe Leu Ile
 85

<210>1282

<211>112

<212>PRT

<213>Chlamydia pneumoniae

<400>1282

Val Leu Tyr Asn Pro Lys Ala Phe Ile Thr His Ala Ala Ser Leu Arg
 1 5 10 15
 Gln Thr Phe Val His Cys Glu Arg Phe Ser Thr Ala Ala Ser Arg Arg
 20 25 30
 Ser Leu Gly Ser Val Ser Val Pro Val Leu Ala Val Asn Leu Ser Ile
 35 40 45
 Arg Leu Asp Val Ile Ala Leu Val Gly Phe Tyr Pro Thr Asn Lys Leu
 50 55 60
 Ile Ser His Lys Leu Phe Leu Asn Arg Lys Val Arg Arg Ser Pro Ser
 65 70 75 80
 Leu Ile Tyr Ile Arg Cys Leu Ile Thr Leu His Ser Val Leu Ala Ile
 85 90 95
 Val Ser Asn Arg Tyr Pro Gln Val Glu Gly Arg Leu Ser Met Tyr Tyr
 100 105 110

<210>1283

<211>77

<212>PRT

<213>Chlamydia pneumoniae

<400>1283

Leu Glu Ser Gly Leu Pro Arg Phe Arg Leu Gly Phe Thr Cys Leu Ala
 1 5 10 15
 Leu Leu Arg Tyr Arg Leu Ala Ser Phe Val Phe Ser Phe Thr Gly Leu
 20 25 30
 Ser Pro Cys Ile Val Gln Leu Ser Arg Ser Ile Gln Leu Lys Leu Lys
 35 40 45
 Ile Pro Cys Tyr Arg Pro Tyr Asn Pro Ile Leu Lys Ile Trp Phe Arg
 50 55 60
 Leu Phe Pro Phe Arg Ser Pro Leu His Arg Glu Ser Leu
 65 70 75

<210>1284

<211>85

<212>PRT

<213>Chlamydia pneumoniae

<400>1284

Met Ile Tyr Gln Asn Gly Ile Gly Val Trp Asn Ile Asn Pro Val Phe
 1 5 10 15
 Tyr Gln Cys Ser Ser Asn Glu Asp Val Gly Phe Leu Ile Phe Glu Phe
 20 25 30
 Arg Lys Asp Ile Arg Glu Val Leu Ser Ser His Leu Thr Met Ser Tyr
 35 40 45
 Ala Asn Thr Ser Leu Arg Asn Gln Ile Ala Asn Gly Leu Ser Lys Ser
 50 55 60
 Ile Asp Ala Leu Asn Pro Ile Met Asn Asp Ile Gly Leu Ser Ser Ser
 65 70 75 80
 Lys Glu Leu Val Pro
 85

<210>1285

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1285

Val Lys Leu Lys Leu Phe Ser Val Ile Ala Cys Ile Thr Phe Gln Lys
 1 5 10 15
 Arg Asp Thr Leu Cys Ser Ile Tyr Thr Ile Gly Asp Phe Leu Gln Ile

20 25
 Gln Ser Ile Asp Ser Ile Trp Val Met Asp Gln Asn Asn Leu Phe Phe
 35 40 45
 Tyr Lys Pro Trp Lys Lys Gly Lys Ser His Lys Asn Asn Cys Ile Leu
 50 55 60
 Gln Gly Phe Leu Gly Ile Asn Gly Phe Cys Leu His Glu Glu Ser Leu
 65 70 75 80
 Ser Cys Pro Arg Cys Ala Arg Thr Tyr His Trp Ile Phe Arg
 85 90

<210>1286

<211>74

<212>PRT

<213>Chlamydia pneumoniae

<400>1286

Met Gln Gln Ser Val Arg Lys Leu Phe Gly Thr Asp Gly Val Arg Gly
 1 5 10 15
 Arg Ala Asn Phe Glu Pro Met Thr Val Glu Thr Thr Val Leu Leu Gly
 20 25 30
 Lys Ala Val Ala Arg Val Leu Arg Glu Gly Arg Ser Gly Lys His Arg
 35 40 45
 Val Val Val Gly Lys Asp Thr Arg Leu Ser Gly Tyr Met Phe Glu Asn
 50 55 60
 Ala Leu Ile Ala Gly Ser Ile Leu Trp Gly
 65 70

<210>1287

<211>88

<212>PRT

<213>Chlamydia pneumoniae

<400>1287

Val His Phe Ser Asn Ser Ser Pro Phe Asn Val Trp Thr Leu Trp Leu
 1 5 10 15
 Ala Ala Cys Cys Thr Leu Ile Ala Arg Asn His Asn Thr Leu Ile Asn
 20 25 30
 Phe Gln Ile Leu Ile Leu Ser Trp Leu Leu Ile Thr Leu Ala Thr Phe
 35 40 45
 Ser Leu Gln Ile Phe Cys Lys Gly Asn Lys Val Leu Leu Ala Thr Gln
 50 55 60
 Thr Val Leu Gly Leu Phe Val Thr Ile Val Gly Thr Gln Leu Leu Val
 65 70 75 80
 Ser Gly Leu Gln Gln Ala Phe Leu
 85

<210>1288

<211>119

<212>PRT

<213>Chlamydia pneumoniae

<400>1288

Met Phe Arg Arg Lys Leu Ser Ile Leu Phe Gln Leu Ser Leu Thr Ser
 1 5 10 15
 Ser Met Val Arg Val Thr Ser Ser Cys Leu Ile Leu Lys Thr Ser Phe
 20 25 30
 Leu Tyr Ser Ala Thr Ala Arg Thr Ala Leu Ser Asp Asn Ser Cys Thr
 35 40 45
 Leu Glu Ala Ala Ser Val Ser Cys Asp Arg Glu Val Lys Thr Phe Pro
 50 55 60
 Ile Pro Leu Lys Lys Val Phe Ala Val Ala Ser Leu Asn Leu Pro Glu
 65 70 75 80
 Ile Leu Trp Thr Asn Pro Lys Met Leu Ser Pro Glu Ile Ser Pro Thr
 85 90 95
 Ile Gly Ala Ile Ala Pro Lys Ile Pro Asn Val Ala Val Ala Ile Pro
 100 105 110
 Ser Gln Arg Ala Tyr Leu Ala
 115

<210>1289

<211>126

<212>PRT

<213>Chlamydia pneumoniae

<400>1289

```

Met Val Ile Ile Phe Arg Leu Ser Ser Ser Leu Phe Ile Gly Arg Cys
 1           5           10           15
Phe Ser Ser Gln Ser Gln Asn Phe Ser Phe Ser Lys His Leu Ile Thr
           20           25           30
Arg Glu Ile Ser Pro Ala Lys Lys Pro Ala Lys Ala Lys Ile Pro Pro
           35           40           45
Pro Leu Lys Ile Ala Thr Met Pro Ile Pro Ile Glu Thr Asn Gly Ala
           50           55           60
Ser Gln Pro Ile Met Ser Glu Arg Asp Pro His Asn Leu Ser Arg Phe
           65           70           75           80
Ser Phe Ser Met Leu Thr Leu Ile Val Ser Ile Leu Phe Ser Cys Arg
           85           90           95
Ala Ser Ser Ser Arg Cys Val Asp Ser Thr Glu Ser Leu Trp His Pro
           100          105          110
Tyr Glu Glu Lys Ser Glu Arg Ile Pro Cys Phe Val Ser Arg
           115          120          125

```

<210>1290

<211>94

<212>PRT

<213>Chlamydia pneumoniae

<400>1290

```

Arg Asp Tyr Val Gly His Pro Met Gly Ile Tyr Arg Asn Arg Arg Cys
 1           5           10           15
Arg Gly Asp Val Trp Thr Ser Lys Lys Ser Ser Leu Cys Arg Ala Ser
           20           25           30
Tyr Ser Leu Arg Ile Phe Arg Leu Pro Asn Asn Leu His Leu Ile Phe
           35           40           45
Phe Ile Thr Phe Trp Leu Ala Leu Pro Thr Ser Thr Ser Glu His Pro
           50           55           60
Gln Ser Leu Tyr Ser Trp Cys Pro Arg His Pro Arg Arg Glu Met Gly
           65           70           75           80
Arg Ser Ala His Glu Cys Arg Pro Asp Tyr Cys Cys Phe Ile
           85           90

```

<210>1291

<211>98

<212>PRT

<213>Chlamydia pneumoniae

<400>1291

```

Met Gly Phe Cys Asn Phe Val Ile Tyr Pro Cys Arg Glu Glu Phe Asn
 1           5           10           15
Ile Phe Cys Cys Pro Ser Ala Asn Lys Leu Ser Ile Phe Ile Phe Thr
           20           25           30
Pro Ala Asn Ala Asp Ser Gly Gly Asp Arg Met Gly Ser Val Arg Glu
           35           40           45
Ser Ser Thr Thr Thr Arg His Asp Tyr Phe Lys Asp Ser Ala Val Phe
           50           55           60
Glu Arg Phe Tyr Thr Gly Ile Tyr Arg Asn Asp Ile Pro Lys Glu Leu
           65           70           75           80
Phe Arg Lys Tyr Arg Cys Ile Arg Asp Asp Ile Lys Ile Phe Asp Phe
           85           90           95
Cys Leu

```

<210>1292

<211>20

<212>DNA

<400>1292

tgaccacttg gttgtaggga 20

<210>1293

<211>20

<212>DNA

<400>1293

ggagtttctcc tttggagtta 20
<210>1294
<211>20
<212>DNA
<400>1294
cgcttagtcc atcggctttt 20
<210>1295
<211>20
<212>DNA
<400>1295
cgaacacctg aacttgctct 20
<210>1296
<211>20
<212>DNA
<400>1296
tctgagagcg ttgaagcaga 20
<210>1297
<211>20
<212>DNA
<400>1297
taggagcata gaccgcaagc 20
<210>1298
<211>20
<212>DNA
<400>1298
ggaaggattc actgcacgta 20
<210>1299
<211>20
<212>DNA
<400>1299
ggtcactccg agcgtcgtca 20
<210>1300
<211>20
<212>DNA
<400>1300
gcatgcagga catctaccta 20
<210>1301
<211>20
<212>DNA
<400>1301
ccacgaatct cttggggaaa 20
<210>1302
<211>20
<212>DNA
<400>1302
ggctcggatc gttgttttct 20
<210>1303
<211>20
<212>DNA
<400>1303
ctgaaacccc gatcataggt 20
<210>1304
<211>20
<212>DNA
<400>1304
gcgggttatt tcttattgga 20
<210>1305
<211>20
<212>DNA
<400>1305
cttgggttgg atggagatag 20
<210>1306
<211>20
<212>DNA

<400>1306
gtggagtcgt agaagtgcaa 20
<210>1307
<211>20
<212>DNA
<400>1307
ggggaagaaa tgccgcaaaa 20
<210>1308
<211>20
<212>DNA
<400>1308
ccaagaagca cagggtttac 20
<210>1309
<211>20
<212>DNA
<400>1309
catgggtctg ttcgcattca 20
<210>1310
<211>20
<212>DNA
<400>1310
cactctgccca ctcttccgta 20
<210>1311
<211>20
<212>DNA
<400>1311
cagacgcagc accaaagaaa 20
<210>1312
<211>20
<212>DNA
<400>1312
cgcttttctc ctaagtgatg 20
<210>1313
<211>20
<212>DNA
<400>1313
ggggcatgaa ctttttaggc 20
<210>1314
<211>20
<212>DNA
<400>1314
ctgaagagct tatccaggag 20
<210>1315
<211>20
<212>DNA
<400>1315
catgagcggg gatttaggtt 20
<210>1316
<211>20
<212>DNA
<400>1316
cccgcgtttg aaataggaga 20
<210>1317
<211>20
<212>DNA
<400>1317
agtccacgt tcaatgcaca 20
<210>1318
<211>20
<212>DNA
<400>1318
gggctagaat tttctgtcac 20
<210>1319
<211>20

<212>DNA
<400>1319
aagaaagcta cggcagtgcg 20
<210>1320
<211>20
<212>DNA
<400>1320
ggacgagctt accgtttttg 20
<210>1321
<211>20
<212>DNA
<400>1321
gaccttgcca gaacttcctt 20
<210>1322
<211>20
<212>DNA
<400>1322
gagcgcttcg aagaggttcc 20
<210>1323
<211>20
<212>DNA
<400>1323
gggaccatac tcttttctgg 20
<210>1324
<211>20
<212>DNA
<400>1324
cccaatctcg tttggctgat 20
<210>1325
<211>20
<212>DNA
<400>1325
ggtcatgggc tagaagagaa 20
<210>1326
<211>20
<212>DNA
<400>1326
cgagcggatc gattaaagag 20
<210>1327
<211>20
<212>DNA
<400>1327
ccaactgttc aagggacgac 20
<210>1328
<211>20
<212>DNA
<400>1328
cgagtcaaag gcttctaacc 20
<210>1329
<211>20
<212>DNA
<400>1329
cctaagtacg aagatcgagg 20
<210>1330
<211>20
<212>DNA
<400>1330
gagcggatcc aagagtttga 20
<210>1331
<211>20
<212>DNA
<400>1331
gggtcgattt cttctccatc 20
<210>1332

```

<211>20
<212>DNA
<400>1332
cagcgcgagttg cagcatttga    20
<210>1333
<211>20
<212>DNA
<400>1333
caggaagtgt tcgcatgttt    20
<210>1334
<211>20
<212>DNA
<400>1334
cgtgatctta ggcaactctt    20
<210>1335
<211>20
<212>DNA
<400>1335
gtgcggttagc gaaaacaacc    20
<210>1336
<211>20
<212>DNA
<400>1336
gcacagtaga tcctaagcag    20
<210>1337
<211>20
<212>DNA
<400>1337
caactgcgag agcggatcca    20
<210>1338
<211>20
<212>DNA
<400>1338
cctcttagct gaggatcttc    20
<210>1339
<211>20
<212>DNA
<400>1339
gttactttct ggagaaaggc    20
<210>1340
<211>20
<212>DNA
<400>1340
gctgcagctg gagatctaaa    20
<210>1341
<211>20
<212>DNA
<400>1341
cgacagtga cgttggaatc    20
<210>1342
<211>20
<212>DNA
<400>1342
ctgcgcaagg acatacgata    20
<210>1343
<211>20
<212>DNA
<400>1343
ggtggactag tcagatagaa    20
<210>1344
<211>20
<212>DNA
<400>1344
cgatgctatt tttccatggc    20

```

<210>1345
<211>20
<212>DNA
<400>1345
ggaggtgcta tcgcgattgc 20
<210>1346
<211>20
<212>DNA
<400>1346
gaacaggcac agcaatcaca 20
<210>1347
<211>20
<212>DNA
<400>1347
cggtttctct caggatgcaa 20
<210>1348
<211>20
<212>DNA
<400>1348
gtatcggctc tttagtcct 20
<210>1349
<211>20
<212>DNA
<400>1349
cctagtagag gttgagtga 20
<210>1350
<211>20
<212>DNA
<400>1350
agctccatac atcgaaggga 20
<210>1351
<211>20
<212>DNA
<400>1351
tcgaactggc ttccggagga 20
<210>1352
<211>20
<212>DNA
<400>1352
ctgcagatct cggcaatac 20
<210>1353
<211>20
<212>DNA
<400>1353
cggaggaact ctctattacc 20
<210>1354
<211>20
<212>DNA
<400>1354
gccctctctt tgtcttgctt 20
<210>1355
<211>20
<212>DNA
<400>1355
gaggggcaat tgcgattcta 20
<210>1356
<211>20
<212>DNA
<400>1356
cgtatcaatg aggtcagtgc 20
<210>1357
<211>20
<212>DNA
<400>1357

gcgggttcctg tagggataaa 20
<210>1358
<211>20
<212>DNA
<400>1358
gctcttcact caaggagggg 20
<210>1359
<211>20
<212>DNA
<400>1359
gttaagggaa gctggggaaa 20
<210>1360
<211>20
<212>DNA
<400>1360
gagacctcac ctggatctat 20
<210>1361
<211>20
<212>DNA
<400>1361
ggggaatcag gtcactaaa 20
<210>1362
<211>20
<212>DNA
<400>1362
caggctttga cccacagtat 20
<210>1363
<211>20
<212>DNA
<400>1363
gacacaggag gttcattctc 20
<210>1364
<211>20
<212>DNA
<400>1364
tctgctcttc aagacctcgg 20
<210>1365
<211>20
<212>DNA
<400>1365
gaaggtaacg aacggctcta 20
<210>1366
<211>20
<212>DNA
<400>1366
gcggatctga ggagtggatg 20
<210>1367
<211>20
<212>DNA
<400>1367
cggaggtaga gatatatccc 20
<210>1368
<211>20
<212>DNA
<400>1368
ggcgaatgta gctcagaaac 20
<210>1369
<211>20
<212>DNA
<400>1369
ggatggggtc tttggttttc 20
<210>1370
<211>20
<212>DNA

<400>1370
cctctgtcgt gagagacaaa 20
<210>1371
<211>20
<212>DNA
<400>1371
tcgggttggtg gagagcaacc 20
<210>1372
<211>20
<212>DNA
<400>1372
cgcaggatcc ccactttttt 20
<210>1373
<211>20
<212>DNA
<400>1373
caaacgtcat aagcgccaca 20
<210>1374
<211>20
<212>DNA
<400>1374
gtatggcatt cgatgtcacg 20
<210>1375
<211>20
<212>DNA
<400>1375
gacctgcagt atagtctacc 20
<210>1376
<211>20
<212>DNA
<400>1376
aggagcgagg ttaccacggt 20
<210>1377
<211>20
<212>DNA
<400>1377
cccaatccat tggtcccgat 20
<210>1378
<211>20
<212>DNA
<400>1378
ccttgattgc gtgttcgtgt 20
<210>1379
<211>20
<212>DNA
<400>1379
aagagctttg ccctgttctc 20
<210>1380
<211>20
<212>DNA
<400>1380
gcttggttga tcggttgagg 20
<210>1381
<211>20
<212>DNA
<400>1381
gctttaggaa ggctagcttc 20
<210>1382
<211>20
<212>DNA
<400>1382
gatagatcaa cacgtacgtc 20
<210>1383
<211>20

<212>DNA
 <400>1383
 ggtggaggag atgaagaatc 20
 <210>1384
 <211>20
 <212>DNA
 <400>1384
 gggtaaaaag agggagcgat 20
 <210>1385
 <211>20
 <212>DNA
 <400>1385
 ccctaagtag gtctgcagat 20
 <210>1386
 <211>20
 <212>DNA
 <400>1386
 cccgttcctc gcctgaaata 20
 <210>1387
 <211>20
 <212>DNA
 <400>1387
 ctccatgata actcgcacca 20
 <210>1388
 <211>20
 <212>DNA
 <400>1388
 ctccagaaac tcctgtgatg 20
 <210>1389
 <211>20
 <212>DNA
 <400>1389
 ggtatatattcc gccgaagaag 20
 <210>1390
 <211>20
 <212>DNA
 <400>1390
 gacgcatgta cttctataag 20
 <210>1391
 <211>20
 <212>DNA
 <400>1391
 gagacgactt cgctaaaacc 20
 <210>1392
 <211>20
 <212>DNA
 <400>1392
 ggtaatgcat gccagtggt 20
 <210>1393
 <211>20
 <212>DNA
 <400>1393
 tggatgaagga gcttgaccaa 20
 <210>1394
 <211>20
 <212>DNA
 <400>1394
 gttcatggga aaggctcgtgg 20
 <210>1395
 <211>20
 <212>DNA
 <400>1395
 cgggccagat cttggaattg 20
 <210>1396

<211>20
 <212>DNA
 <400>1396
 gaccttgcca gcttgggtcg 20
 <210>1397
 <211>20
 <212>DNA
 <400>1397
 gctgctaaat cccatcgctt 20
 <210>1398
 <211>20
 <212>DNA
 <400>1398
 gttttgtggc tttggcagtg 20
 <210>1399
 <211>20
 <212>DNA
 <400>1399
 actttcctaa gaagcgtagc 20
 <210>1400
 <211>20
 <212>DNA
 <400>1400
 gaggaatggc gcaggagtta 20
 <210>1401
 <211>20
 <212>DNA
 <400>1401
 gcagtgaaaa cggaatccag 20
 <210>1402
 <211>20
 <212>DNA
 <400>1402
 gcgtggggat tgtagggata 20
 <210>1403
 <211>20
 <212>DNA
 <400>1403
 ggccggggat caatcagcta 20
 <210>1404
 <211>20
 <212>DNA
 <400>1404
 gaataagatg caggcggaag 20
 <210>1405
 <211>20
 <212>DNA
 <400>1405
 gggagacgtt tgtgcgtaaa 20
 <210>1406
 <211>20
 <212>DNA
 <400>1406
 cgtcctgcag gtgttattgt 20
 <210>1407
 <211>20
 <212>DNA
 <400>1407
 caaggggtgt agagaaagga 20
 <210>1408
 <211>20
 <212>DNA
 <400>1408
 gaagacaaac cttgtcctgg 20

<210>1409
<211>20
<212>DNA
<400>1409
cgtactaggg attgagcata 20
<210>1410
<211>20
<212>DNA
<400>1410
gagtgtctga cgtttctgag 20
<210>1411
<211>20
<212>DNA
<400>1411
ggaccgccat tacgagaaat 20
<210>1412
<211>20
<212>DNA
<400>1412
gagttgaact cctgccttga 20
<210>1413
<211>20
<212>DNA
<400>1413
atcagatcga agagctccag 20
<210>1414
<211>20
<212>DNA
<400>1414
ggtctaagca cgtaggttgt 20
<210>1415
<211>20
<212>DNA
<400>1415
gggatggcct taggtaaagt 20
<210>1416
<211>20
<212>DNA
<400>1416
ctgagagctg aacttgcttg 20
<210>1417
<211>20
<212>DNA
<400>1417
ctttggaaca tcgcaaagcg 20
<210>1418
<211>20
<212>DNA
<400>1418
cttggtaggg ttgtagagtc 20
<210>1419
<211>20
<212>DNA
<400>1419
gagttgaact cctgccttga 20
<210>1420
<211>20
<212>DNA
<400>1420
ggcatgttta tagtgtggcg 20
<210>1421
<211>20
<212>DNA
<400>1421


```

atgtgacagg tgctacccca    20
<210>1422
<211>20
<212>DNA
<400>1422
gagaatcaga ggcaagtcca    20
<210>1423
<211>20
<212>DNA
<400>1423
gaaggcttcc ttagtgagca    20
<210>1424
<211>20
<212>DNA
<400>1424
cagcgagttg cagcatttga    20
<210>1425
<211>20
<212>DNA
<400>1425
tcgcatgttt aggaccgctg    20
<210>1426
<211>20
<212>DNA
<400>1426
ttcctgaggc cccagaagag    20
<210>1427
<211>20
<212>DNA
<400>1427
gcatgttttag gaccgctgaa    20
<210>1428
<211>20
<212>DNA
<400>1428
ccatactctc tgatgcagcg    20
<210>1429
<211>20
<212>DNA
<400>1429
ggctctttaga gaaaccgagt    20
<210>1430
<211>20
<212>DNA
<400>1430
ctcggcaacg agttcaagaa    20
<210>1431
<211>20
<212>DNA
<400>1431
ggatatccag cacgtgctct    20
<210>1432
<211>20
<212>DNA
<400>1432
gttgtggctc aagaaggaca    20
<210>1433
<211>20
<212>DNA
<400>1433
gcgtgtgaaa gaagctgaag    20
<210>1434
<211>20
<212>DNA

```

```

<400>1434
cagctgaagg ctttcatttg      20
<210>1435
<211>20
<212>DNA
<400>1435
gcggagttgt gtgggtatatt      20
<210>1436
<211>20
<212>DNA
<400>1436
gcaacaaaagg cgaaatggca      20
<210>1437
<211>20
<212>DNA
<400>1437
cctatctatc ttacccaccg      20
<210>1438
<211>20
<212>DNA
<400>1438
gggaagcatc atcctactat      20
<210>1439
<211>20
<212>DNA
<400>1439
gtgcagatag cctctattgc      20
<210>1440
<211>20
<212>DNA
<400>1440
ggcatcgacg ccatcagtga      20
<210>1441
<211>20
<212>DNA
<400>1441
gtggcgtttg atttccagca      20
<210>1442
<211>20
<212>DNA
<400>1442
gattttgtca cgtggccgat      20
<210>1443
<211>20
<212>DNA
<400>1443
ggagatagcc taagttagcc      20
<210>1444
<211>20
<212>DNA
<400>1444
cgaacaaccc ctctccaag      20
<210>1445
<211>20
<212>DNA
<400>1445
ggggttttga gaagaaaacc      20
<210>1446
<211>20
<212>DNA
<400>1446
gagcagtagc tccacattga      20
<210>1447
<211>20

```

<212>DNA
<400>1447
cttaaactcg cagctttcgc 20
<210>1448
<211>20
<212>DNA
<400>1448
ccaaggacag catctcctaa 20
<210>1449
<211>20
<212>DNA
<400>1449
acaggggtca gagtaacaga 20
<210>1450
<211>20
<212>DNA
<400>1450
ccccgcttgc tttcaatact 20
<210>1451
<211>20
<212>DNA
<400>1451
cagagtttag cgtgggggtta 20
<210>1452
<211>20
<212>DNA
<400>1452
gagcgcgtta ccgataaaga 20
<210>1453
<211>20
<212>DNA
<400>1453
cggctttgag tgatcaagtg 20
<210>1454
<211>20
<212>DNA
<400>1454
aaactccctc tgcttggcgt 20
<210>1455
<211>20
<212>DNA
<400>1455
agagattggt gccgcctgta 20
<210>1456
<211>20
<212>DNA
<400>1456
ccccgaaggc ttcaaaaatc 20
<210>1457
<211>20
<212>DNA
<400>1457
cagggaaata ccaagtagag 20
<210>1458
<211>20
<212>DNA
<400>1458
gcgggaaaag taaagctcct 20
<210>1459
<211>20
<212>DNA
<400>1459
ccctcaggaa cagaacctaa 20
<210>1460

<211>20
<212>DNA
<400>1460
ctcggagcgg tttggcttta 20
<210>1461
<211>20
<212>DNA
<400>1461
gagtacttgc tttcctagca 20
<210>1462
<211>20
<212>DNA
<400>1462
tgctataggc atccatacgc 20
<210>1463
<211>20
<212>DNA
<400>1463
tccctctgct tggcgtggat 20
<210>1464
<211>20
<212>DNA
<400>1464
ggctctagat ggaaaacctg 20
<210>1465
<211>20
<212>DNA
<400>1465
gcgcacgtat gcaggaatct 20
<210>1466
<211>20
<212>DNA
<400>1466
caccctacac ttgacctatg 20
<210>1467
<211>20
<212>DNA
<400>1467
gaatgggagt cccaaactca 20
<210>1468
<211>20
<212>DNA
<400>1468
tttgggcgag tccgttcgta 20
<210>1469
<211>20
<212>DNA
<400>1469
gagagagaaa aagcaacctc 20
<210>1470
<211>20
<212>DNA
<400>1470
gcctcaggaa taggattctc 20
<210>1471
<211>20
<212>DNA
<400>1471
ggagtcgtag acctaaaggta 20
<210>1472
<211>20
<212>DNA
<400>1472
gataccgaaa tgcccctgta 20

<210>1473
<211>20
<212>DNA
<400>1473
aggctgcatc cggattctat 20
<210>1474
<211>20
<212>DNA
<400>1474
gttgcctgat gtaacctcag 20
<210>1475
<211>20
<212>DNA
<400>1475
gtgacagggg attggacgac 20
<210>1476
<211>20
<212>DNA
<400>1476
ctcaagatca attttggggc 20
<210>1477
<211>20
<212>DNA
<400>1477
gccccccctt aatatcagta 20
<210>1478
<211>20
<212>DNA
<400>1478
caatagggttg tgaaaggaga 20
<210>1479
<211>20
<212>DNA
<400>1479
ctgattgtca ctctgggatg 20
<210>1480
<211>20
<212>DNA
<400>1480
gacgggtcac ttatacgcat 20
<210>1481
<211>20
<212>DNA
<400>1481
gttactatgc tcgtctagcc 20
<210>1482
<211>20
<212>DNA
<400>1482
gtaggtgcgt gactgattag 20
<210>1483
<211>20
<212>DNA
<400>1483
ccgccaccag gatattttga 20
<210>1484
<211>20
<212>DNA
<400>1484
ggcgattcct gaagacacta 20
<210>1485
<211>20
<212>DNA
<400>1485

ggctctctcc gactgtctat 20
<210>1486
<211>20
<212>DNA
<400>1486
gggttggtcta cagacatcgt 20
<210>1487
<211>20
<212>DNA
<400>1487
cgcatgtaca gagattctcc 20
<210>1488
<211>20
<212>DNA
<400>1488
gctcattgga acagttgctc 20
<210>1489
<211>20
<212>DNA
<400>1489
cgatctagaa gagctcagtc 20
<210>1490
<211>20
<212>DNA
<400>1490
ccttcgcacc cgtagattta 20
<210>1491
<211>20
<212>DNA
<400>1491
cgcaaggttt tgtgaaaggg 20
<210>1492
<211>20
<212>DNA
<400>1492
ttatcggcac ggtttccgaa 20
<210>1493
<211>20
<212>DNA
<400>1493
attacacgcg cgctatcagg 20
<210>1494
<211>20
<212>DNA
<400>1494
agcctccagt ctccctcttta 20
<210>1495
<211>20
<212>DNA
<400>1495
cgtgggttctg ctttgaaagc 20
<210>1496
<211>20
<212>DNA
<400>1496
gaccgcgcag gcgtatgtaa 20
<210>1497
<211>20
<212>DNA
<400>1497
ccttcgcacc cgtagattta 20
<210>1498
<211>20
<212>DNA

<400>1498
 ggatggacaa tgcgtctctg 20
 <210>1499
 <211>20
 <212>DNA
 <400>1499
 gtacagcagg tatagtcgag 20
 <210>1500
 <211>20
 <212>DNA
 <400>1500
 gtcgttaggg aagtaactgg 20
 <210>1501
 <211>20
 <212>DNA
 <400>1501
 aggtgctgct ggagtcaata 20
 <210>1502
 <211>20
 <212>DNA
 <400>1502
 ggctctagaa gcatatgggg 20
 <210>1503
 <211>20
 <212>DNA
 <400>1503
 catgacagcc gatgttgaag 20
 <210>1504
 <211>20
 <212>DNA
 <400>1504
 tattactggc ggtttgcctc 20
 <210>1505
 <211>20
 <212>DNA
 <400>1505
 agcctgtggc tattccttcg 20
 <210>1506
 <211>20
 <212>DNA
 <400>1506
 cagatgcagc ttgttgtagc 20
 <210>1507
 <211>20
 <212>DNA
 <400>1507
 gtagcaagca taacccttg 20
 <210>1508
 <211>20
 <212>DNA
 <400>1508
 gctgctggat gagctaaaga 20
 <210>1509
 <211>20
 <212>DNA
 <400>1509
 ggttgaggga atctctacag 20
 <210>1510
 <211>20
 <212>DNA
 <400>1510
 cgtcagtttg tagcactatg 20
 <210>1511
 <211>20

<212>DNA
 <400>1511
 caacgtggag atagtgtgat 20
 <210>1512
 <211>20
 <212>DNA
 <400>1512
 ggatctagaa gaaggcctac 20
 <210>1513
 <211>20
 <212>DNA
 <400>1513
 ggaaggtatt cgagctgttg 20
 <210>1514
 <211>20
 <212>DNA
 <400>1514
 catgtgagtc ctagagctgt 20
 <210>1515
 <211>20
 <212>DNA
 <400>1515
 cccttggtgt tgcaaaggca 20
 <210>1516
 <211>20
 <212>DNA
 <400>1516
 cagggcgttt tggatgacta 20
 <210>1517
 <211>20
 <212>DNA
 <400>1517
 gagagcgagg gttttttctc 20
 <210>1518
 <211>20
 <212>DNA
 <400>1518
 tcgccagatg ggactagata 20
 <210>1519
 <211>20
 <212>DNA
 <400>1519
 gttcctcagc tcttcttgag 20
 <210>1520
 <211>20
 <212>DNA
 <400>1520
 cctgtggact gttattgtcc 20
 <210>1521
 <211>20
 <212>DNA
 <400>1521
 gattccgtgc aagagtcttg 20
 <210>1522
 <211>20
 <212>DNA
 <400>1522
 gtctttatgc ggattcccgt 20
 <210>1523
 <211>20
 <212>DNA
 <400>1523
 cccgagagtc ttcgatctat 20
 <210>1524

<211>20
<212>DNA
<400>1524
aagtcattggc cgaagtctcg 20
<210>1525
<211>20
<212>DNA
<400>1525
cctgtggact gttattgtcc 20
<210>1526
<211>20
<212>DNA
<400>1526
ggaggagtga ttcattggact 20
<210>1527
<211>20
<212>DNA
<400>1527
catcaccgat gtaggtcaag 20
<210>1528
<211>20
<212>DNA
<400>1528
gagtcgcttc acattgcagta 20
<210>1529
<211>20
<212>DNA
<400>1529
gtctccgagg tccttacttt 20
<210>1530
<211>20
<212>DNA
<400>1530
ccgttgcggt atgtagcggg 20
<210>1531
<211>20
<212>DNA
<400>1531
gcttttgtgc tcttcttctc 20
<210>1532
<211>20
<212>DNA
<400>1532
tgatactata cgcctgggga 20
<210>1533
<211>20
<212>DNA
<400>1533
acactgggat cgcagtgtct 20
<210>1534
<211>20
<212>DNA
<400>1534
gatcgcatct tccctgcttc 20
<210>1535
<211>20
<212>DNA
<400>1535
gacggtcaga gaattccaag 20
<210>1536
<211>20
<212>DNA
<400>1536
gaacgatttc ctcggagtta 20

<210>1537
<211>20
<212>DNA
<400>1537
cagagactcc tgtaactccg 20
<210>1538
<211>20
<212>DNA
<400>1538
gcatagaaca gggcattctc 20
<210>1539
<211>20
<212>DNA
<400>1539
gagaagagca aggtgcgaaa 20
<210>1540
<211>20
<212>DNA
<400>1540
gctaagtttg tgagggctgt 20
<210>1541
<211>20
<212>DNA
<400>1541
gcaacgcaga tgctagaatc 20
<210>1542
<211>20
<212>DNA
<400>1542
gctaagtttg tgagggctgt 20
<210>1543
<211>20
<212>DNA
<400>1543
cacgagctga agtctctgat 20
<210>1544
<211>20
<212>DNA
<400>1544
cagaagctcc aagcactcca 20
<210>1545
<211>20
<212>DNA
<400>1545
ccgtgactcc aagcacttct 20
<210>1546
<211>20
<212>DNA
<400>1546
cggaggtctt gaacggtatt 20
<210>1547
<211>20
<212>DNA
<400>1547
caaaggcgat tccaggatag 20
<210>1548
<211>20
<212>DNA
<400>1548
ctcgggtgcc ccagaaaaat 20
<210>1549
<211>20
<212>DNA
<400>1549

ccgtctgctg taaaaagtgc 20
<210>1550
<211>20
<212>DNA
<400>1550
tggaagaca accttgggta 20
<210>1551
<211>20
<212>DNA
<400>1551
ggaaagctgc gtcgtatcat 20
<210>1552
<211>20
<212>DNA
<400>1552
ggccttcctt tcatcattac 20
<210>1553
<211>20
<212>DNA
<400>1553
ggagctcata tgagtgcctt 20
<210>1554
<211>20
<212>DNA
<400>1554
tcgtctaacc gttggttgaa 20
<210>1555
<211>20
<212>DNA
<400>1555
tagttgccag tgcgtttgct 20
<210>1556
<211>20
<212>DNA
<400>1556
cagcataggg ttttgattgc 20
<210>1557
<211>20
<212>DNA
<400>1557
ttgctgcata ctggcccaga 20
<210>1558
<211>20
<212>DNA
<400>1558
cctcactccc catgaaatca 20
<210>1559
<211>20
<212>DNA
<400>1559
tctggtctgg gtaaaagcgt 20
<210>1560
<211>20
<212>DNA
<400>1560
cgcgtagatc ccagaagaaa 20
<210>1561
<211>20
<212>DNA
<400>1561
gcagagatga atgggggaat 20
<210>1562
<211>20
<212>DNA

<400>1562
ctggtggcca tgggaacggc 20
<210>1563
<211>20
<212>DNA
<400>1563
catctatgat ccagaagccc 20
<210>1564
<211>20
<212>DNA
<400>1564
ccaacgccct ccgcatgcaa 20
<210>1565
<211>20
<212>DNA
<400>1565
gtatccatct catgcggact 20
<210>1566
<211>20
<212>DNA
<400>1566
ctgaccgcat cgcattaaga 20
<210>1567
<211>20
<212>DNA
<400>1567
ctgtagatgc tcacggaagt 20
<210>1568
<211>20
<212>DNA
<400>1568
gcggaggata tgacgacttt 20
<210>1569
<211>20
<212>DNA
<400>1569
ggacatgcaa cgcaaattga 20
<210>1570
<211>20
<212>DNA
<400>1570
gttctttgag accctcgact 20
<210>1571
<211>20
<212>DNA
<400>1571
cgcacatcct tgagcaacaa 20
<210>1572
<211>20
<212>DNA
<400>1572
cactacctgc tgctaaagga 20
<210>1573
<211>20
<212>DNA
<400>1573
ggtcttccca tgcaacgttt 20
<210>1574
<211>20
<212>DNA
<400>1574
cttaaagccc ggattcgtga 20
<210>1575
<211>20

```

<212>DNA
<400>1575
ggagctggag ataaaggaag      20
<210>1576
<211>20
<212>DNA
<400>1576
gtatcgccca agaattgcct      20
<210>1577
<211>20
<212>DNA
<400>1577
caagcccag aatgggtttt      20
<210>1578
<211>20
<212>DNA
<400>1578
aagaacggag gcgattatcc      20
<210>1579
<211>20
<212>DNA
<400>1579
gcgaagccct gtatattctc      20
<210>1580
<211>20
<212>DNA
<400>1580
ggtacgatcc acatagctct      20
<210>1581
<211>20
<212>DNA
<400>1581
gccgtcgcaa atgaaaatgc      20
<210>1582
<211>20
<212>DNA
<400>1582
gctgctgctt cgcatttgat      20
<210>1583
<211>20
<212>DNA
<400>1583
gctctcttgg atgccgatgt      20
<210>1584
<211>20
<212>DNA
<400>1584
cgagaagttc aagctgagaa      20
<210>1585
<211>20
<212>DNA
<400>1585
gtagctatgg ggcaagatgt      20
<210>1586
<211>20
<212>DNA
<400>1586
ggtgaaggca tggaaaagag      20
<210>1587
<211>20
<212>DNA
<400>1587
gaggcgatta tcctgtccat      20
<210>1588

```

<211>20
<212>DNA
<400>1588
cccatgacat tccttgtaag 20
<210>1589
<211>20
<212>DNA
<400>1589
gatggtccat tgcaaacgag 20
<210>1590
<211>20
<212>DNA
<400>1590
ctcggatgcc tagtgatatct 20
<210>1591
<211>20
<212>DNA
<400>1591
gagcaaagtg agcgtagaac 20
<210>1592
<211>20
<212>DNA
<400>1592
gcctagtga ctacgcgatt 20
<210>1593
<211>20
<212>DNA
<400>1593
gcatgcgaag aggacttttg 20
<210>1594
<211>20
<212>DNA
<400>1594
ggatacgatg tatgctaggg 20
<210>1595
<211>20
<212>DNA
<400>1595
gctagcagct gcaaatcagt 20
<210>1596
<211>20
<212>DNA
<400>1596
cgtttagcgg cttttcctgt 20
<210>1597
<211>20
<212>DNA
<400>1597
cggtgtagag tatgtccagt 20
<210>1598
<211>20
<212>DNA
<400>1598
aaactgggat agggattgcc 20
<210>1599
<211>20
<212>DNA
<400>1599
gagttcccct tcatttaccc 20
<210>1600
<211>20
<212>DNA
<400>1600
ctgctgcaga agatgctttg 20

<210>1601
<211>20
<212>DNA
<400>1601
ccgcagatttt tctccataga 20
<210>1602
<211>20
<212>DNA
<400>1602
cggtgtc gat gacagctact 20
<210>1603
<211>20
<212>DNA
<400>1603
ccttaggatt gggctgtgggt 20
<210>1604
<211>20
<212>DNA
<400>1604
cgctttctga agctgagtct 20
<210>1605
<211>20
<212>DNA
<400>1605
gcgcaagagg aggttacaaa 20
<210>1606
<211>20
<212>DNA
<400>1606
gtttgttgcg tcagtggag 20
<210>1607
<211>20
<212>DNA
<400>1607
cttgcatctt tgacgcgtga 20
<210>1608
<211>20
<212>DNA
<400>1608
gtagtgcgaa accgcctttt 20
<210>1609
<211>20
<212>DNA
<400>1609
gaagatgcaa gtgaacggct 20
<210>1610
<211>20
<212>DNA
<400>1610
cttccgaaga gaactaggca 20
<210>1611
<211>20
<212>DNA
<400>1611
gaggaagagg agcatcatct 20
<210>1612
<211>20
<212>DNA
<400>1612
ccccagtata ggcaggcaac 20
<210>1613
<211>20
<212>DNA
<400>1613

gcaatgagca agagccttagg 20
 <210>1614
 <211>20
 <212>DNA
 <400>1614
 agcctgcgag catagtgtct 20
 <210>1615
 <211>20
 <212>DNA
 <400>1615
 cttttacggg atccgggtcta 20
 <210>1616
 <211>20
 <212>DNA
 <400>1616
 cagcagttga gcgggttttt 20
 <210>1617
 <211>20
 <212>DNA
 <400>1617
 gtagtgaggg tgtttctcct 20
 <210>1618
 <211>20
 <212>DNA
 <400>1618
 cttcacaagc tgcggttcta 20
 <210>1619
 <211>20
 <212>DNA
 <400>1619
 tcgaactcgg tgataagctg 20
 <210>1620
 <211>20
 <212>DNA
 <400>1620
 cgctacttga gacaaaggga 20
 <210>1621
 <211>20
 <212>DNA
 <400>1621
 cttcctgtgt taaggctatc 20
 <210>1622
 <211>20
 <212>DNA
 <400>1622
 atctccttgg aagacgtagc 20
 <210>1623
 <211>20
 <212>DNA
 <400>1623
 agcacggtaa ggggattcag 20
 <210>1624
 <211>20
 <212>DNA
 <400>1624
 acttgctgag aatgatgtgc 20
 <210>1625
 <211>20
 <212>DNA
 <400>1625
 cggaacagct ttactccct 20
 <210>1626
 <211>20
 <212>DNA

<400>1626
 cggtagata gccattgctc 20
 <210>1627
 <211>20
 <212>DNA
 <400>1627
 cgctacttga gacaaaggga 20
 <210>1628
 <211>20
 <212>DNA
 <400>1628
 gagcgcccat gttttcatgt 20
 <210>1629
 <211>20
 <212>DNA
 <400>1629
 cgtaggggaa tatggtgaag 20
 <210>1630
 <211>20
 <212>DNA
 <400>1630
 ggtaagatga ttcctccacg 20
 <210>1631
 <211>20
 <212>DNA
 <400>1631
 gagacctcat ggaaaattgt 20
 <210>1632
 <211>20
 <212>DNA
 <400>1632
 gggagaacga ttttttccag 20
 <210>1633
 <211>20
 <212>DNA
 <400>1633
 gtggcttctt cttcttcct 20
 <210>1634
 <211>20
 <212>DNA
 <400>1634
 gggttgtaat tcggcgatc 20
 <210>1635
 <211>20
 <212>DNA
 <400>1635
 gggatgttat gttggaatag 20
 <210>1636
 <211>20
 <212>DNA
 <400>1636
 cgtccgtgag tatctaggaa 20
 <210>1637
 <211>20
 <212>DNA
 <400>1637
 gtggtaggca atgagttgga 20
 <210>1638
 <211>20
 <212>DNA
 <400>1638
 gagatttcaa atcccagggt 20
 <210>1639
 <211>20

<212>DNA
<400>1639
gaaaccatcc gcagatgaga 20
<210>1640
<211>20
<212>DNA
<400>1640
cacttgata tcgaaacctg 20
<210>1641
<211>20
<212>DNA
<400>1641
ccttgagatc ggatttcctc 20
<210>1642
<211>20
<212>DNA
<400>1642
ggtaggagtt gggggaaaaa 20
<210>1643
<211>20
<212>DNA
<400>1643
cgaagcgttt gcagagttct 20
<210>1644
<211>20
<212>DNA
<400>1644
gggtaggaac ggatcttttg 20
<210>1645
<211>20
<212>DNA
<400>1645
ggctagaaaa agccgtgagt 20
<210>1646
<211>20
<212>DNA
<400>1646
gatgccactc tatagtcacg 20
<210>1647
<211>20
<212>DNA
<400>1647
ccacagcgct actactatgt 20
<210>1648
<211>20
<212>DNA
<400>1648
cttgctttct aaggctttgc 20
<210>1649
<211>20
<212>DNA
<400>1649
gggtgtaggg aaaactgcta 20
<210>1650
<211>20
<212>DNA
<400>1650
caggaagact gccagaagtt 20
<210>1651
<211>20
<212>DNA
<400>1651
acagaggggg ctttgaatgc 20
<210>1652

<211>20
<212>DNA
<400>1652
catatccaaa gtggctcctc 20
<210>1653
<211>20
<212>DNA
<400>1653
cccgcccttt aaaacgtttg 20
<210>1654
<211>20
<212>DNA
<400>1654
tctccaagag cgtcaacgcc 20
<210>1655
<211>20
<212>DNA
<400>1655
cgtggctttt ctctgaaga 20
<210>1656
<211>20
<212>DNA
<400>1656
agcgtcaacg ccatcttgcc 20
<210>1657
<211>20
<212>DNA
<400>1657
cgtggctttt ctctgaaga 20
<210>1658
<211>20
<212>DNA
<400>1658
gcaggagaag ccggtcgcgg 20
<210>1659
<211>20
<212>DNA
<400>1659
ggtgcgtact cctgaagaaa 20
<210>1660
<211>20
<212>DNA
<400>1660
cctgtgacga acgaacagtt 20
<210>1661
<211>20
<212>DNA
<400>1661
agcatggggg accaatggct 20
<210>1662
<211>20
<212>DNA
<400>1662
gtgccaaagat tggatatgggt 20
<210>1663
<211>20
<212>DNA
<400>1663
gtggtggtgc aggagaagcc 20
<210>1664
<211>20
<212>DNA
<400>1664
ctgctatccg gaattgtggg 20

<210>1665
<211>20
<212>DNA
<400>1665
catcgtaata atcctggggc 20
<210>1666
<211>20
<212>DNA
<400>1666
ggcgaagaaa gctatagacc 20
<210>1667
<211>20
<212>DNA
<400>1667
ggtggagagg tgattccaaa 20
<210>1668
<211>20
<212>DNA
<400>1668
gcagaaagaa ctggtggggtc 20
<210>1669
<211>20
<212>DNA
<400>1669
ctaagagcaa ggagtttgag 20
<210>1670
<211>20
<212>DNA
<400>1670
gccaaaatga gacctgtagg 20
<210>1671
<211>20
<212>DNA
<400>1671
ggacgactta aggaatcaag 20
<210>1672
<211>20
<212>DNA
<400>1672
gaagccccta tagctactga 20
<210>1673
<211>20
<212>DNA
<400>1673
gagtattaga gaggctacct 20
<210>1674
<211>20
<212>DNA
<400>1674
gtctgggcaa gaagctaaag 20
<210>1675
<211>20
<212>DNA
<400>1675
caattggagc ccatacactc 20
<210>1676
<211>20
<212>DNA
<400>1676
ggaacgtgga tctcaacttg 20
<210>1677
<211>20
<212>DNA
<400>1677

gcccctatag ctactgaaa 20
<210>1678
<211>20
<212>DNA
<400>1678
agcagcatgg cctcaaata 20
<210>1679
<211>20
<212>DNA
<400>1679
ctccgctatg ggattttcgt 20
<210>1680
<211>20
<212>DNA
<400>1680
aaagtacgtc ctgatgcctt 20
<210>1681
<211>20
<212>DNA
<400>1681
tgaggaaaccc accagggatt 20
<210>1682
<211>20
<212>DNA
<400>1682
ccaggttcct cactaagaac 20
<210>1683
<211>20
<212>DNA
<400>1683
ggtggcaagc caagtgttta 20
<210>1684
<211>20
<212>DNA
<400>1684
acgaagcttg ccaattaggg 20
<210>1685
<211>20
<212>DNA
<400>1685
ggttgacacat tccttatggg 20
<210>1686
<211>20
<212>DNA
<400>1686
ccggtttcga gcttaaagag 20
<210>1687
<211>20
<212>DNA
<400>1687
aggtggtag agcagcagaa 20
<210>1688
<211>20
<212>DNA
<400>1688
ttcgggcaga tgcttgaga 20
<210>1689
<211>20
<212>DNA
<400>1689
gattgtggag ttgcagctct 20
<210>1690
<211>20
<212>DNA

```

<400>1690
cctcctgata gtaaaacccc      20
<210>1691
<211>20
<212>DNA
<400>1691
ccagttctttt aggcggtgtct    20
<210>1692
<211>20
<212>DNA
<400>1692
ggtgcgctgc tcatgctttt     20
<210>1693
<211>20
<212>DNA
<400>1693
caagcagctc ttctgtagca     20
<210>1694
<211>20
<212>DNA
<400>1694
gaggggcaaa ttggaaacct     20
<210>1695
<211>20
<212>DNA
<400>1695
taagaggcct gctgccccat     20
<210>1696
<211>20
<212>DNA
<400>1696
gcacatactg aggagctctt     20
<210>1697
<211>20
<212>DNA
<400>1697
gggagacgaa gtttcttgga     20
<210>1698
<211>20
<212>DNA
<400>1698
gttcgcgat ttttccacct      20
<210>1699
<211>20
<212>DNA
<400>1699
gcgagccttt cttggtctat     20
<210>1700
<211>20
<212>DNA
<400>1700
gggctaactc taggaagcgt     20
<210>1701
<211>20
<212>DNA
<400>1701
gggttgatag gaatcttccc     20
<210>1702
<211>20
<212>DNA
<400>1702
gtcagtgtgt gtctatagag     20
<210>1703
<211>20

```

<212>DNA
<400>1703
ggaataggca catactgagg 20
<210>1704
<211>20
<212>DNA
<400>1704
agtgggtgcg ggagtcactc 20
<210>1705
<211>20
<212>DNA
<400>1705
ccaaggtgta tctacatctg 20
<210>1706
<211>20
<212>DNA
<400>1706
cggttgcagc taaacgttct 20
<210>1707
<211>20
<212>DNA
<400>1707
gggggatttg gtttgatct 20
<210>1708
<211>20
<212>DNA
<400>1708
caaagccgctc cttctcatct 20
<210>1709
<211>20
<212>DNA
<400>1709
gattcgctat gctcaaggctc 20
<210>1710
<211>20
<212>DNA
<400>1710
ggctcttctc cttgcttcca 20
<210>1711
<211>20
<212>DNA
<400>1711
ccgtccttgt cttgcttttt 20
<210>1712
<211>20
<212>DNA
<400>1712
gcgattgtat tgagtcgtgg 20
<210>1713
<211>20
<212>DNA
<400>1713
ccattgtttt tggaaccag 20
<210>1714
<211>20
<212>DNA
<400>1714
caggatctaa atgtggagcc 20
<210>1715
<211>20
<212>DNA
<400>1715
cattgaacag cttcttgggc 20
<210>1716

<211>20
<212>DNA
<400>1716
gcgtcaactc caatctcagc 20
<210>1717
<211>20
<212>DNA
<400>1717
cgagtctttg atttaccct 20
<210>1718
<211>20
<212>DNA
<400>1718
gcttcttcca tgtatgctac 20
<210>1719
<211>20
<212>DNA
<400>1719
acgtaagggc tcgactaact 20
<210>1720
<211>20
<212>DNA
<400>1720
ccggaaatac gctaaagtcc 20
<210>1721
<211>20
<212>DNA
<400>1721
gatggatggg cgtatatcca 20
<210>1722
<211>20
<212>DNA
<400>1722
ctctcaagcc gaagaaagag 20
<210>1723
<211>20
<212>DNA
<400>1723
ccatgccgcg gtacctttta 20
<210>1724
<211>20
<212>DNA
<400>1724
gcaatcacct cttgaagcag 20
<210>1725
<211>20
<212>DNA
<400>1725
gcatgagctg tgtcaatgac 20
<210>1726
<211>20
<212>DNA
<400>1726
ccgttctgga gacgagatac 20
<210>1727
<211>20
<212>DNA
<400>1727
tgaacttgct ctcgacccca 20
<210>1728
<211>20
<212>DNA
<400>1728
gaccctgccg ttaccctagc 20

<210>1729
<211>20
<212>DNA
<400>1729
ctgtagctgc agcaagttct 20
<210>1730
<211>20
<212>DNA
<400>1730
cggtcttacc agctatatgg 20
<210>1731
<211>20
<212>DNA
<400>1731
ggcccaaaac cagtccaaat 20
<210>1732
<211>20
<212>DNA
<400>1732
gccggagaga tctaaaagca 20
<210>1733
<211>20
<212>DNA
<400>1733
acctcgggtga ggtaggata 20
<210>1734
<211>20
<212>DNA
<400>1734
gggcttgcac agctttttct 20
<210>1735
<211>20
<212>DNA
<400>1735
gactcttcat cagtcttagc 20
<210>1736
<211>20
<212>DNA
<400>1736
cagctcctgt gatctcacag 20
<210>1737
<211>20
<212>DNA
<400>1737
caacaaccct tggaacctca 20
<210>1738
<211>20
<212>DNA
<400>1738
ttaggggtccg ttgggatagg 20
<210>1739
<211>20
<212>DNA
<400>1739
gggcttgcac agctttttct 20
<210>1740
<211>20
<212>DNA
<400>1740
gacagtcaca cctgccttta 20
<210>1741
<211>20
<212>DNA
<400>1741

gacctggaga tggtagagaaa 20
<210>1742
<211>20
<212>DNA
<400>1742
ggactactac cataatacag 20
<210>1743
<211>20
<212>DNA
<400>1743
caggatcccc attggtaatc 20
<210>1744
<211>20
<212>DNA
<400>1744
ggactactac cataatacag 20
<210>1745
<211>20
<212>DNA
<400>1745
caggatcccc attggtaatc 20
<210>1746
<211>20
<212>DNA
<400>1746
caaccatctt cacccgtaga 20
<210>1747
<211>20
<212>DNA
<400>1747
ccgcttgaac cccacatttt 20
<210>1748
<211>20
<212>DNA
<400>1748
gcgatcggta aactctcatc 20
<210>1749
<211>20
<212>DNA
<400>1749
ggactactac cataatacag 20
<210>1750
<211>20
<212>DNA
<400>1750
cctctccttt cactttcctc 20
<210>1751
<211>20
<212>DNA
<400>1751
cgactccagg tattcctaca 20
<210>1752
<211>20
<212>DNA
<400>1752
ggtgaggtct ctcaatgtct 20
<210>1753
<211>20
<212>DNA
<400>1753
cactagaacc ctacctatgc 20
<210>1754
<211>20
<212>DNA

<400>1754
 cctgatgtca gtatttccgc 20
 <210>1755
 <211>20
 <212>DNA
 <400>1755
 ggcagaaaac ctttgtcgaa 20
 <210>1756
 <211>20
 <212>DNA
 <400>1756
 ccatgtctgg agcatggaaa 20
 <210>1757
 <211>20
 <212>DNA
 <400>1757
 ttcaattatg gcgccctcgt 20
 <210>1758
 <211>20
 <212>DNA
 <400>1758
 gttcctctgg agacttgaac 20
 <210>1759
 <211>20
 <212>DNA
 <400>1759
 cagcattgtc ttgggattcc 20
 <210>1760
 <211>20
 <212>DNA
 <400>1760
 gcttacgcta gaatcgctct 20
 <210>1761
 <211>20
 <212>DNA
 <400>1761
 ccatgtctgg agcatggaaa 20
 <210>1762
 <211>20
 <212>DNA
 <400>1762
 ggacaaacaa tgcttgcagg 20
 <210>1763
 <211>20
 <212>DNA
 <400>1763
 taatcccctc ttagcagggg 20
 <210>1764
 <211>20
 <212>DNA
 <400>1764
 gtggatgggt gcaatttct 20
 <210>1765
 <211>20
 <212>DNA
 <400>1765
 ccttcccttg ggaaaaatct 20
 <210>1766
 <211>20
 <212>DNA
 <400>1766
 ccgcggataa cagtcacata 20
 <210>1767
 <211>20

<212>DNA
<400>1767
aggtagggttc cgtgggtcata 20
<210>1768
<211>20
<212>DNA
<400>1768
gccaacgaga tacagacgac 20
<210>1769
<211>20
<212>DNA
<400>1769
ggacaaacaa tgcttgcagg 20
<210>1770
<211>20
<212>DNA
<400>1770
gcctgcacta ctattgcaca 20
<210>1771
<211>20
<212>DNA
<400>1771
gcccagcaca aataagatac 20
<210>1772
<211>20
<212>DNA
<400>1772
ggacttccgt tatgctaagg 20
<210>1773
<211>20
<212>DNA
<400>1773
gctctcctgc tccagagata 20
<210>1774
<211>20
<212>DNA
<400>1774
ccctatcacc tccaagattc 20
<210>1775
<211>20
<212>DNA
<400>1775
cgctatccct attgtcggaa 20
<210>1776
<211>20
<212>DNA
<400>1776
gagaccttcc ttcaccagta 20
<210>1777
<211>20
<212>DNA
<400>1777
ctatccccgaa cggaaaagac 20
<210>1778
<211>20
<212>DNA
<400>1778
ggccacacag atctcaaaaa 20
<210>1779
<211>20
<212>DNA
<400>1779
cttctggagc tgtagatctc 20
<210>1780

<211>20
<212>DNA
<400>1780
caggaacctt tgctatcgaa 20
<210>1781
<211>20
<212>DNA
<400>1781
tatcccagac gcctccacag 20
<210>1782
<211>20
<212>DNA
<400>1782
ccctagctcc catcatatct 20
<210>1783
<211>20
<212>DNA
<400>1783
ctaggccaca cagatctcaa 20
<210>1784
<211>20
<212>DNA
<400>1784
cacaagctca agtccttagg 20
<210>1785
<211>20
<212>DNA
<400>1785
actcccgact ctcgcacttg 20
<210>1786
<211>20
<212>DNA
<400>1786
ccgtccaatc tagggttaga 20
<210>1787
<211>20
<212>DNA
<400>1787
gtctcgaaga gggatctcat 20
<210>1788
<211>20
<212>DNA
<400>1788
cccctcagct attgctaaag 20
<210>1789
<211>20
<212>DNA
<400>1789
cgctcaacca atccctaatc 20
<210>1790
<211>20
<212>DNA
<400>1790
cctttgacgg aggacttggt 20
<210>1791
<211>20
<212>DNA
<400>1791
tggaggggact cgtacacaaa 20
<210>1792
<211>20
<212>DNA
<400>1792
aaagcctttg acggaggact 20

<210>1793
<211>20
<212>DNA
<400>1793
tcttttgagg gactcgtaca 20
<210>1794
<211>20
<212>DNA
<400>1794
gcgctatgtt cctcactgct 20
<210>1795
<211>20
<212>DNA
<400>1795
gcatgggcta ccaaattcttc 20
<210>1796
<211>20
<212>DNA
<400>1796
gcctttctgtc ataagctctc 20
<210>1797
<211>20
<212>DNA
<400>1797
aggagccggg aaaattccta 20
<210>1798
<211>20
<212>DNA
<400>1798
gccatgacga atcaaaggga 20
<210>1799
<211>20
<212>DNA
<400>1799
cttttagcctt gggatgatgc 20
<210>1800
<211>20
<212>DNA
<400>1800
gtttgtggta tcgcccttga 20
<210>1801
<211>20
<212>DNA
<400>1801
ggaggcttca actgtatagg 20
<210>1802
<211>20
<212>DNA
<400>1802
aaatttgtcc tggcccagcc 20
<210>1803
<211>20
<212>DNA
<400>1803
gggcaattcc cgtagtgaaa 20
<210>1804
<211>20
<212>DNA
<400>1804
acctcttctg ttgtatctgg 20
<210>1805
<211>20
<212>DNA
<400>1805

eggtagaat gccacgccc 20
 <210>1806
 <211>20
 <212>DNA
 <400>1806
 ccctcaactc tcgaaaacag 20
 <210>1807
 <211>20
 <212>DNA
 <400>1807
 cttgtcggct tctggctctt 20
 <210>1808
 <211>20
 <212>DNA
 <400>1808
 agacctatgc aaagtatggg 20
 <210>1809
 <211>20
 <212>DNA
 <400>1809
 gtgcagaaaa cccacgaatc 20
 <210>1810
 <211>20
 <212>DNA
 <400>1810
 ctcttggttc gaagagaaaag 20
 <210>1811
 <211>20
 <212>DNA
 <400>1811
 cgacagctct cagagagatt 20
 <210>1812
 <211>20
 <212>DNA
 <400>1812
 ggagaacacc caagacaatc 20
 <210>1813
 <211>20
 <212>DNA
 <400>1813
 cctgagcttt cacatcaagc 20
 <210>1814
 <211>20
 <212>DNA
 <400>1814
 gtgcgtgcct tgttctagat 20
 <210>1815
 <211>20
 <212>DNA
 <400>1815
 ggacgctcat agtcttcctt 20
 <210>1816
 <211>20
 <212>DNA
 <400>1816
 gtagcctctc tggtcacttt 20
 <210>1817
 <211>20
 <212>DNA
 <400>1817
 gaggccccca gatattcttt 20
 <210>1818
 <211>20
 <212>DNA

<400>1818
caggaggaag ctacatttgc 20
<210>1819
<211>20
<212>DNA
<400>1819
ccgctatcct cagcttttct 20
<210>1820
<211>20
<212>DNA
<400>1820
cgatattcag agaaacgccc 20
<210>1821
<211>20
<212>DNA
<400>1821
ccctgaatgc gcttctatca 20
<210>1822
<211>20
<212>DNA
<400>1822
cattgtcttc cctcccacaa 20
<210>1823
<211>20
<212>DNA
<400>1823
tcttcttcat ccaggcccag 20
<210>1824
<211>20
<212>DNA
<400>1824
caagcagttc tccaagctct 20
<210>1825
<211>20
<212>DNA
<400>1825
ggcatacctg agacaccttt 20
<210>1826
<211>20
<212>DNA
<400>1826
tggttcgttg gtaaagctgc 20
<210>1827
<211>20
<212>DNA
<400>1827
gatcaccagc taaagactgc 20
<210>1828
<211>20
<212>DNA
<400>1828
cgactttaca gcacactctc 20
<210>1829
<211>20
<212>DNA
<400>1829
ggtgcatctg aaaaccaaac 20
<210>1830
<211>20
<212>DNA
<400>1830
gacgactcta tagcgtttgg 20
<210>1831
<211>20

<212>DNA
<400>1831
ctcctgtgga gaatgaagtc 20
<210>1832
<211>20
<212>DNA
<400>1832
cccttttagca atctgggtcca 20
<210>1833
<211>20
<212>DNA
<400>1833
tggtgcgtat ggaaccaaatt 20
<210>1834
<211>20
<212>DNA
<400>1834
aagcctagga ctgcctgagg 20
<210>1835
<211>20
<212>DNA
<400>1835
gcttagggat tctcatcctc 20
<210>1836
<211>20
<212>DNA
<400>1836
gcttgcagct gacgaatatg 20
<210>1837
<211>20
<212>DNA
<400>1837
cattctggga gctatcccta 20
<210>1838
<211>20
<212>DNA
<400>1838
cagaacaaga aggctcctca 20
<210>1839
<211>20
<212>DNA
<400>1839
ctcggcctcg gaatagtaag 20
<210>1840
<211>20
<212>DNA
<400>1840
cctataaacac cgcaaattctc 20
<210>1841
<211>20
<212>DNA
<400>1841
ccgaagcagc cttcttcaat 20
<210>1842
<211>20
<212>DNA
<400>1842
actgcttcca gcttgggaat 20
<210>1843
<211>20
<212>DNA
<400>1843
gactcgggat tgtagctctt 20
<210>1844

<211>20
<212>DNA
<400>1844
ccgtggtctt tgcttacgat 20
<210>1845
<211>20
<212>DNA
<400>1845
gcateccctgg aatttcttgc 20
<210>1846
<211>20
<212>DNA
<400>1846
gggccttcct acctttccta 20
<210>1847
<211>20
<212>DNA
<400>1847
gcttgcagct gacgaatatg 20
<210>1848
<211>20
<212>DNA
<400>1848
gccaggggaag aatcacatca 20
<210>1849
<211>20
<212>DNA
<400>1849
cgcagtgcac agaactagga 20
<210>1850
<211>20
<212>DNA
<400>1850
gaacttggga cctcgacatt 20
<210>1851
<211>20
<212>DNA
<400>1851
gggccacttt gcgctatatt 20
<210>1852
<211>20
<212>DNA
<400>1852
caaatcggga gtctcaagat 20
<210>1853
<211>20
<212>DNA
<400>1853
gtgacaagaa gcaccgtctt 20
<210>1854
<211>20
<212>DNA
<400>1854
ccagggatag ggtgaaaagc 20
<210>1855
<211>20
<212>DNA
<400>1855
cactcttgag caaggtatcc 20
<210>1856
<211>20
<212>DNA
<400>1856
gcaaccccag tatatctcca 20

<210>1857
<211>20
<212>DNA
<400>1857
gagtaacccc aggtaaagca 20
<210>1858
<211>20
<212>DNA
<400>1858
ccgccatcgc tatgaagtaa 20
<210>1859
<211>20
<212>DNA
<400>1859
gcagtgatga cttctcctac 20
<210>1860
<211>20
<212>DNA
<400>1860
cagtacaagc ggaacgtatg 20
<210>1861
<211>20
<212>DNA
<400>1861
ggaggagttg tctcctcttt 20
<210>1862
<211>20
<212>DNA
<400>1862
tcgggatatg gtacagaacc 20
<210>1863
<211>20
<212>DNA
<400>1863
atggaactct ctcaatgcga 20
<210>1864
<211>20
<212>DNA
<400>1864
ccagaagcat acgagcggtt 20
<210>1865
<211>20
<212>DNA
<400>1865
caagccatgt ctaagccatc 20
<210>1866
<211>20
<212>DNA
<400>1866
gaccttaacc tttccttgcg 20
<210>1867
<211>20
<212>DNA
<400>1867
gatttccaac agcgcctctt 20
<210>1868
<211>20
<212>DNA
<400>1868
cctccttgaa ctaactgagc 20
<210>1869
<211>20
<212>DNA
<400>1869

ggcataggat ctgcgagcaa 20
<210>1870
<211>20
<212>DNA
<400>1870
gcagctcgat ggaagacatt 20
<210>1871
<211>20
<212>DNA
<400>1871
gccgaagaat gttcacgttg 20
<210>1872
<211>20
<212>DNA
<400>1872
cttcaactct cgagactgat 20
<210>1873
<211>20
<212>DNA
<400>1873
cggggagcat tttatgtagc 20
<210>1874
<211>20
<212>DNA
<400>1874
cctcatgaaa cagagtctcg 20
<210>1875
<211>20
<212>DNA
<400>1875
ggaggaaaaat gaccttgtgg 20
<210>1876
<211>20
<212>DNA
<400>1876
cttcaactct cgagactgat 20
<210>1877
<211>20
<212>DNA
<400>1877
cggggagcat tttatgtagc 20
<210>1878
<211>20
<212>DNA
<400>1878
gaagaagagt ttccttggtc 20
<210>1879
<211>20
<212>DNA
<400>1879
gctcctaaaa cgatcgctga 20
<210>1880
<211>20
<212>DNA
<400>1880
cctcgggcta ggaatacttt 20
<210>1881
<211>20
<212>DNA
<400>1881
acctgcagct cgatggaaga 20
<210>1882
<211>20
<212>DNA

<400>1882
ccgccataaa agggtagaga 20
<210>1883
<211>20
<212>DNA
<400>1883
gcacgctata cacagaagca 20
<210>1884
<211>20
<212>DNA
<400>1884
cccatgtcg tacgaaaagt 20
<210>1885
<211>20
<212>DNA
<400>1885
gtaggcccga acacaatagc 20
<210>1886
<211>20
<212>DNA
<400>1886
gacgataccc cggaaatcat 20
<210>1887
<211>20
<212>DNA
<400>1887
ctgccaattg aagaatcggg 20
<210>1888
<211>20
<212>DNA
<400>1888
gctgcagatc aatatgcgga 20
<210>1889
<211>20
<212>DNA
<400>1889
tacacgaggg cagaggcctt 20
<210>1890
<211>20
<212>DNA
<400>1890
ccaccgtca cacgaataat 20
<210>1891
<211>20
<212>DNA
<400>1891
cccatgtcg tacgaaaagt 20
<210>1892
<211>20
<212>DNA
<400>1892
gtcttactag agagggcgat 20
<210>1893
<211>20
<212>DNA
<400>1893
gggaagctat gtagggtttc 20
<210>1894
<211>20
<212>DNA
<400>1894
cctgcatgca gtgataacga 20
<210>1895
<211>20

<212>DNA
 <400>1895
 gtggagggaa aaaagtggag 20
 <210>1896
 <211>20
 <212>DNA
 <400>1896
 gacaaagccg atatgctggt 20
 <210>1897
 <211>20
 <212>DNA
 <400>1897
 cctagaaacg ctgcagatca 20
 <210>1898
 <211>20
 <212>DNA
 <400>1898
 cttccccttc ctggaatcaa 20
 <210>1899
 <211>20
 <212>DNA
 <400>1899
 cgagtcgta ctttgtcttc 20
 <210>1900
 <211>20
 <212>DNA
 <400>1900
 cagaagctca ttggggaaaa 20
 <210>1901
 <211>20
 <212>DNA
 <400>1901
 tttgctgccc tcctagatca 20
 <210>1902
 <211>20
 <212>DNA
 <400>1902
 ccagaacacg tcgacatagc 20
 <210>1903
 <211>20
 <212>DNA
 <400>1903
 cttccccttc ctggaatcaa 20
 <210>1904
 <211>20
 <212>DNA
 <400>1904
 cggaagatc gttctggcat 20
 <210>1905
 <211>20
 <212>DNA
 <400>1905
 gcaggttacg agtctactaa 20
 <210>1906
 <211>20
 <212>DNA
 <400>1906
 gcagacacat tacccttcac 20
 <210>1907
 <211>20
 <212>DNA
 <400>1907
 cccggcagca gaactccctg 20
 <210>1908

```

<211>20
<212>DNA
<400>1908
caccatctac agttgagtct 20
<210>1909
<211>20
<212>DNA
<400>1909
gtcctccatc tgcataca 20
<210>1910
<211>20
<212>DNA
<400>1910
gctattggtg cttgtaggtc 20
<210>1911
<211>20
<212>DNA
<400>1911
catggagaag tcgtggtatc 20
<210>1912
<211>20
<212>DNA
<400>1912
atccgcccc gacagtaaat 20
<210>1913
<211>20
<212>DNA
<400>1913
cctgaagtta atccagttgc 20
<210>1914
<211>20
<212>DNA
<400>1914
ctgtgatctc cattgcgaac 20
<210>1915
<211>20
<212>DNA
<400>1915
cgtaagaaat agaagccaag 20
<210>1916
<211>20
<212>DNA
<400>1916
tggtctggatt tgaaccaacg 20
<210>1917
<211>20
<212>DNA
<400>1917
actagtccta tgcctcctg 20
<210>1918
<211>20
<212>DNA
<400>1918
gtgatcctct tccacacaag 20
<210>1919
<211>20
<212>DNA
<400>1919
ccgcgctgtg atctccattg 20
<210>1920
<211>20
<212>DNA
<400>1920
gctaaggaaa acgcttcgca 20

```

<210>1921
<211>20
<212>DNA
<400>1921
ccatctactg ttgaatcgag 20
<210>1922
<211>20
<212>DNA
<400>1922
cccctagtct ttggtatcag 20
<210>1923
<211>20
<212>DNA
<400>1923
gtgatcctct tccacacaag 20
<210>1924
<211>20
<212>DNA
<400>1924
gctaggccat attctcatgg 20
<210>1925
<211>20
<212>DNA
<400>1925
catgggtcat ccaaatacaca 20
<210>1926
<211>20
<212>DNA
<400>1926
ctgacgctaa agagctctct 20
<210>1927
<211>20
<212>DNA
<400>1927
ctcttgtctc aaccctttcc 20
<210>1928
<211>20
<212>DNA
<400>1928
gccaaagacaa caagctgatt 20
<210>1929
<211>20
<212>DNA
<400>1929
cggagaacct agaaaccttc 20
<210>1930
<211>20
<212>DNA
<400>1930
caattcgctt aacaccagag 20
<210>1931
<211>20
<212>DNA
<400>1931
caggaacact acgcaatcct 20
<210>1932
<211>20
<212>DNA
<400>1932
ctctttgttg ggggattggc 20
<210>1933
<211>20
<212>DNA
<400>1933

cgtatagagg gtagttcttg 20
<210>1934
<211>20
<212>DNA
<400>1934
gggattggca gggttgcgga 20
<210>1935
<211>20
<212>DNA
<400>1935
gggtagttct tgtgcatcag 20
<210>1936
<211>20
<212>DNA
<400>1936
gactccctga aactgaagag 20
<210>1937
<211>20
<212>DNA
<400>1937
aggttcccta ggactcagcg 20
<210>1938
<211>20
<212>DNA
<400>1938
gaggatccgt tctcttcttc 20
<210>1939
<211>20
<212>DNA
<400>1939
ctctcctgga ttaagcggtc 20
<210>1940
<211>20
<212>DNA
<400>1940
gggaacaagg gccatcaaaa 20
<210>1941
<211>20
<212>DNA
<400>1941
gtagcagtac atctacctgg 20
<210>1942
<211>20
<212>DNA
<400>1942
ccgcacaaaa ccgcttatac 20
<210>1943
<211>20
<212>DNA
<400>1943
gactcttgct tctcctttga 20
<210>1944
<211>20
<212>DNA
<400>1944
gccacggtta tgaagacgaa 20
<210>1945
<211>20
<212>DNA
<400>1945
atagcacaca cctgctgacg 20
<210>1946
<211>20
<212>DNA

<400>1946
gtcttccctt tccttctgga 20
<210>1947
<211>20
<212>DNA
<400>1947
gctcctggga aaagttgagc 20
<210>1948
<211>20
<212>DNA
<400>1948
gagcacgtga tccaagaaac 20
<210>1949
<211>20
<212>DNA
<400>1949
ggttacggat cacttgctga 20
<210>1950
<211>20
<212>DNA
<400>1950
ccagaggtat ccccacaaat 20
<210>1951
<211>20
<212>DNA
<400>1951
cgactgggtc tcagtcacaa 20
<210>1952
<211>20
<212>DNA
<400>1952
acaatacccc cgtcctctaa 20
<210>1953
<211>20
<212>DNA
<400>1953
gctatagtta cagcttgggg 20
<210>1954
<211>20
<212>DNA
<400>1954
gaacttgaga tcctccctt 20
<210>1955
<211>20
<212>DNA
<400>1955
tccacgtcag catctgtcat 20
<210>1956
<211>20
<212>DNA
<400>1956
cctcagcata agtgctacta 20
<210>1957
<211>20
<212>DNA
<400>1957
ctccttggcg tgtaggaata 20
<210>1958
<211>20
<212>DNA
<400>1958
gctcgcatte gtcataaga 20
<210>1959
<211>20

<212>DNA
<400>1959
cagtaatagc ggatgcatcg 20
<210>1960
<211>20
<212>DNA
<400>1960
aatcgcaaatt ggaatcgcg 20
<210>1961
<211>20
<212>DNA
<400>1961
ggataaggct tatctggaga 20
<210>1962
<211>20
<212>DNA
<400>1962
gacgaacttc ttggtgacga 20
<210>1963
<211>20
<212>DNA
<400>1963
ccccagaaa tctcctagaa 20
<210>1964
<211>20
<212>DNA
<400>1964
gtaggcctaa ttaactcggg 20
<210>1965
<211>20
<212>DNA
<400>1965
catcgatctc atgcgacact 20
<210>1966
<211>20
<212>DNA
<400>1966
gcctctattc tgtaccagga 20
<210>1967
<211>20
<212>DNA
<400>1967
ctacctatgg aacactgagc 20
<210>1968
<211>20
<212>DNA
<400>1968
gagctcgcaa aagctgtggt 20
<210>1969
<211>20
<212>DNA
<400>1969
aagcggctag aacagcagtg 20
<210>1970
<211>20
<212>DNA
<400>1970
ggtcgagtgt ttcttcggat 20
<210>1971
<211>20
<212>DNA
<400>1971
gtatcctgcc gtggttagctt 20
<210>1972

```

<211>20
<212>DNA
<400>1972
gagcagaccg atagagggat      20
<210>1973
<211>20
<212>DNA
<400>1973
ccatagcaat agtgattccg      20
<210>1974
<211>20
<212>DNA
<400>1974
atgacaccct accaaagcga      20
<210>1975
<211>20
<212>DNA
<400>1975
aggggggtgat tttcgaaagc      20
<210>1976
<211>20
<212>DNA
<400>1976
ccgcgaagca gaatctgtat      20
<210>1977
<211>20
<212>DNA
<400>1977
cgactcaaga aacgaggaag      20
<210>1978
<211>20
<212>DNA
<400>1978
gaagggtgttc ttaccacta      20
<210>1979
<211>20
<212>DNA
<400>1979
gcaagcttac ctaaacacac      20
<210>1980
<211>20
<212>DNA
<400>1980
cagaaacgga cagggtatca      20
<210>1981
<211>20
<212>DNA
<400>1981
gcctgataca cagaagcact      20
<210>1982
<211>20
<212>DNA
<400>1982
ataggaaatg cgggcgtacc      20
<210>1983
<211>20
<212>DNA
<400>1983
gcaagagggt ccaacaaact      20
<210>1984
<211>20
<212>DNA
<400>1984
ctcttccagg agccgttcaa      20

```

<210>1985
 <211>20
 <212>DNA
 <400>1985
 gggaaagatg ccttaggact 20
 <210>1986
 <211>20
 <212>DNA
 <400>1986
 gcagtgggtct ttaggactca 20
 <210>1987
 <211>20
 <212>DNA
 <400>1987
 cctcgcccaa ggtttttattg 20
 <210>1988
 <211>20
 <212>DNA
 <400>1988
 ggaagtactg aaggatctgt 20
 <210>1989
 <211>20
 <212>DNA
 <400>1989
 cgccagtttt tcattctcgac 20
 <210>1990
 <211>20
 <212>DNA
 <400>1990
 cgtcttgccct caagtagctt 20
 <210>1991
 <211>20
 <212>DNA
 <400>1991
 agcaatggag ctctaacagc 20
 <210>1992
 <211>20
 <212>DNA
 <400>1992
 cggttccttc ttgaaactct 20
 <210>1993
 <211>20
 <212>DNA
 <400>1993
 tgaaggcggt acctacgctc 20
 <210>1994
 <211>20
 <212>DNA
 <400>1994
 ccgcatgcta gttcttagca 20
 <210>1995
 <211>20
 <212>DNA
 <400>1995
 agtattttcc cccatcctgc 20
 <210>1996
 <211>20
 <212>DNA
 <400>1996
 cttcttttgg atccactcct 20
 <210>1997
 <211>20
 <212>DNA
 <400>1997

gactacgaca atgcttgcac 20
<210>1998
<211>20
<212>DNA
<400>1998
cgcaatcttt cactccacca 20
<210>1999
<211>20
<212>DNA
<400>1999
gcgatccaga ctttccaatc 20
<210>2000
<211>20
<212>DNA
<400>2000
ggccgcagta tttccatact 20
<210>2001
<211>20
<212>DNA
<400>2001
ctagggacaa agagaaagag 20
<210>2002
<211>20
<212>DNA
<400>2002
ctggccgact ctcccctatg 20
<210>2003
<211>20
<212>DNA
<400>2003
cagctttagc agcagcatag 20
<210>2004
<211>20
<212>DNA
<400>2004
gctatagctt tctctgcagc 20
<210>2005
<211>20
<212>DNA
<400>2005
ccaccaagc ctgttaaact 20
<210>2006
<211>20
<212>DNA
<400>2006
gagttatttg agcgacaagg 20
<210>2007
<211>20
<212>DNA
<400>2007
acatattggc tcccttgctc 20
<210>2008
<211>20
<212>DNA
<400>2008
cccttccgctc caaccgagac 20
<210>2009
<211>20
<212>DNA
<400>2009
ggaaatcaag tcgttctctga 20
<210>2010
<211>20
<212>DNA

<400>2010
gcgtaccagt ctcagtacta 20
<210>2011
<211>20
<212>DNA
<400>2011
gagggttttgc caaaacgcct 20
<210>2012
<211>20
<212>DNA
<400>2012
acctctccag gcatttatgg 20
<210>2013
<211>20
<212>DNA
<400>2013
gagactacag ttcggggata 20
<210>2014
<211>20
<212>DNA
<400>2014
ccgtctatcg aatccacgta 20
<210>2015
<211>20
<212>DNA
<400>2015
gcaacatgcc cacctaaaga 20
<210>2016
<211>20
<212>DNA
<400>2016
ccgatttcga gggcattcta 20
<210>2017
<211>20
<212>DNA
<400>2017
gtccgcaata gttgcatgac 20
<210>2018
<211>20
<212>DNA
<400>2018
atgactggag ggaagttttc 20
<210>2019
<211>20
<212>DNA
<400>2019
ccccctcccaa acctatagaa 20
<210>2020
<211>20
<212>DNA
<400>2020
cggtagcaaaa aacttcacgc 20
<210>2021
<211>20
<212>DNA
<400>2021
cgtccatgtg atgtaatcct 20
<210>2022
<211>20
<212>DNA
<400>2022
caggccactt tgcctaattgt 20
<210>2023
<211>20

<212>DNA
 <400>2023
 cgggcccgcgct tcctgtatta 20
 <210>2024
 <211>20
 <212>DNA
 <400>2024
 taacaagctg ccagtctccc 20
 <210>2025
 <211>20
 <212>DNA
 <400>2025
 agactccaag tcagccaaga 20
 <210>2026
 <211>20
 <212>DNA
 <400>2026
 gctcttggttc ttgacggaga 20
 <210>2027
 <211>20
 <212>DNA
 <400>2027
 gcctgcgccc tattatagaa 20
 <210>2028
 <211>20
 <212>DNA
 <400>2028
 gcccgtttca tagagtcaac 20
 <210>2029
 <211>20
 <212>DNA
 <400>2029
 tgctcagcca tagaaactcg 20
 <210>2030
 <211>20
 <212>DNA
 <400>2030
 ccttaggaat cggccattgt 20
 <210>2031
 <211>20
 <212>DNA
 <400>2031
 ggcaaaggaa cggatcaatg 20
 <210>2032
 <211>20
 <212>DNA
 <400>2032
 gaacacgaat gggcttattg 20
 <210>2033
 <211>20
 <212>DNA
 <400>2033
 gcccgtttca tagagtcaac 20
 <210>2034
 <211>20
 <212>DNA
 <400>2034
 cagctagcgt ctgttctgaa 20
 <210>2035
 <211>20
 <212>DNA
 <400>2035
 cgaggctcct cgtaataaga 20
 <210>2036

<211>20
<212>DNA
<400>2036
cgaccaagta actgattccc 20
<210>2037
<211>20
<212>DNA
<400>2037
gcaagggtctc atatccagga 20
<210>2038
<211>20
<212>DNA
<400>2038
gcgtagctgg cttttggaaa 20
<210>2039
<211>20
<212>DNA
<400>2039
gggtatagga aagaactcgg 20
<210>2040
<211>20
<212>DNA
<400>2040
cagctgagtc tatcttctga 20
<210>2041
<211>20
<212>DNA
<400>2041
ggaatatagt cgcttcctga 20
<210>2042
<211>20
<212>DNA
<400>2042
ccttcatttg caggtcgctt 20
<210>2043
<211>20
<212>DNA
<400>2043
ccaacacgaa ctgcgtagtt 20
<210>2044
<211>20
<212>DNA
<400>2044
gcgccaaatc ctgtttctct 20
<210>2045
<211>20
<212>DNA
<400>2045
gccttctctt tagtccttcg 20
<210>2046
<211>20
<212>DNA
<400>2046
ctgacaagcc ctttgcaaaa 20
<210>2047
<211>20
<212>DNA
<400>2047
gacgagaatt tatgggggtgc 20
<210>2048
<211>20
<212>DNA
<400>2048
tctgaaaatg gtggagcgga 20

<210>2049
<211>20
<212>DNA
<400>2049
ccttcctacc tggatcacaa 20
<210>2050
<211>20
<212>DNA
<400>2050
cgagctcgaa gtacaacgta 20
<210>2051
<211>20
<212>DNA
<400>2051
ccctacggag ctttcattga 20
<210>2052
<211>20
<212>DNA
<400>2052
cgatcctttc ttcgctcgtga 20
<210>2053
<211>20
<212>DNA
<400>2053
gatccttgag caagtcagca 20
<210>2054
<211>20
<212>DNA
<400>2054
gatgaagggt ctgctgagat 20
<210>2055
<211>20
<212>DNA
<400>2055
gctgaacctt aaagcgtcgt 20
<210>2056
<211>20
<212>DNA
<400>2056
gcactctgca cgtgtttatg 20
<210>2057
<211>20
<212>DNA
<400>2057
cgtcaaagat ctggcaacag 20
<210>2058
<211>20
<212>DNA
<400>2058
cagttcaagt tcacttgcag 20
<210>2059
<211>20
<212>DNA
<400>2059
cgcaaaaaca ggagaaggtc 20
<210>2060
<211>20
<212>DNA
<400>2060
ctacctgtca gggtgttatg 20
<210>2061
<211>20
<212>DNA
<400>2061

gtcaaagaag ttcgcaaagg 20
<210>2062
<211>20
<212>DNA
<400>2062
gcagcacgca ctaatctatg 20
<210>2063
<211>20
<212>DNA
<400>2063
gactatggat cttgcagtag 20
<210>2064
<211>20
<212>DNA
<400>2064
cgattgaagt tttccctacc 20
<210>2065
<211>20
<212>DNA
<400>2065
gactggtttag gtgtccttac 20
<210>2066
<211>20
<212>DNA
<400>2066
tttggatgat gggcgttgtc 20
<210>2067
<211>20
<212>DNA
<400>2067
cgtgtgtaac gtctggatca 20
<210>2068
<211>20
<212>DNA
<400>2068
gcaggttctt accttgctct 20
<210>2069
<211>20
<212>DNA
<400>2069
caatttcgtc agcagaacac 20
<210>2070
<211>20
<212>DNA
<400>2070
gaagctggaa aggctgagaa 20
<210>2071
<211>20
<212>DNA
<400>2071
gctggatatga ttgatgccac 20
<210>2072
<211>20
<212>DNA
<400>2072
tccgcaatct cataggagac 20
<210>2073
<211>20
<212>DNA
<400>2073
ggcattcatg ttcgcacaga 20
<210>2074
<211>20
<212>DNA

<400>2074
 ctctgtaa at ggctcgttcc 20
 <210>2075
 <211>20
 <212>DNA
 <400>2075
 ccattgcaaa agcttacgga 20
 <210>2076
 <211>20
 <212>DNA
 <400>2076
 ccttccttag aagaactcgc 20
 <210>2077
 <211>20
 <212>DNA
 <400>2077
 ccatgtccct gtgcaaatag 20
 <210>2078
 <211>20
 <212>DNA
 <400>2078
 cgccgtgggt atagctatac 20
 <210>2079
 <211>20
 <212>DNA
 <400>2079
 cctgaccttc atgttttggg 20
 <210>2080
 <211>20
 <212>DNA
 <400>2080
 tcccttcggt atcgatgccc 20
 <210>2081
 <211>20
 <212>DNA
 <400>2081
 acaggaaaga gacctcgccg 20
 <210>2082
 <211>20
 <212>DNA
 <400>2082
 ggtctaaagg aagattctcc 20
 <210>2083
 <211>20
 <212>DNA
 <400>2083
 cagtctccaa catgacttcc 20
 <210>2084
 <211>20
 <212>DNA
 <400>2084
 cttgcttttg tccgagtagc 20
 <210>2085
 <211>20
 <212>DNA
 <400>2085
 cttcccatg gatatacagg 20
 <210>2086
 <211>20
 <212>DNA
 <400>2086
 ctcttcttag gcttcccat 20
 <210>2087
 <211>20

<212>DNA
 <400>2087
 gttcctccct ggaaacgatg 20
 <210>2088
 <211>20
 <212>DNA
 <400>2088
 agccgccttg gtcattgtga 20
 <210>2089
 <211>20
 <212>DNA
 <400>2089
 tctatcatgc cttcgttgcc 20
 <210>2090
 <211>20
 <212>DNA
 <400>2090
 cggaaaacct cccagaaatc 20
 <210>2091
 <211>20
 <212>DNA
 <400>2091
 gccacctgaa actgccataa 20
 <210>2092
 <211>20
 <212>DNA
 <400>2092
 gcagcaggta cgatcttaga 20
 <210>2093
 <211>20
 <212>DNA
 <400>2093
 taagggactg gtactcgctc 20
 <210>2094
 <211>20
 <212>DNA
 <400>2094
 cccccataat tggggacaaa 20
 <210>2095
 <211>20
 <212>DNA
 <400>2095
 atgtggacgg gcttcaccct 20
 <210>2096
 <211>20
 <212>DNA
 <400>2096
 gagaggcgta gcccttcata 20
 <210>2097
 <211>20
 <212>DNA
 <400>2097
 gccctcatga tgcaaaagca 20
 <210>2098
 <211>20
 <212>DNA
 <400>2098
 ggaaaggtaa gcatggctgt 20
 <210>2099
 <211>20
 <212>DNA
 <400>2099
 gaagcagcag gtacgatctt 20
 <210>2100

<211>20
<212>DNA
<400>2100
ccttcggatc ttcccatttc 20
<210>2101
<211>20
<212>DNA
<400>2101
gaggaatcaa agtcatgccc 20
<210>2102
<211>20
<212>DNA
<400>2102
ctgggtcaga ctctgattac 20
<210>2103
<211>20
<212>DNA
<400>2103
cgctatttcc attccctcca 20
<210>2104
<211>20
<212>DNA
<400>2104
gggggattaa aggaaacctc 20
<210>2105
<211>20
<212>DNA
<400>2105
ctgacggaaa gcgttttagca 20
<210>2106
<211>20
<212>DNA
<400>2106
ccacacgagt catacctaca 20
<210>2107
<211>20
<212>DNA
<400>2107
ctcactggct cctaaactca 20
<210>2108
<211>20
<212>DNA
<400>2108
ctgatacgaa catagcctcc 20
<210>2109
<211>20
<212>DNA
<400>2109
ccacacgagt catacctaca 20
<210>2110
<211>20
<212>DNA
<400>2110
gctaacggag caaactcctg 20
<210>2111
<211>20
<212>DNA
<400>2111
ccctaggttg acgagaaaag 20
<210>2112
<211>20
<212>DNA
<400>2112
ggacagtatg agagacagca 20

<210>2113
<211>20
<212>DNA
<400>2113
gagtggcagg cataaacctt 20
<210>2114
<211>20
<212>DNA
<400>2114
atttgtcgat accaccacca 20
<210>2115
<211>20
<212>DNA
<400>2115
cgcaagtcga ggaattgtca 20
<210>2116
<211>20
<212>DNA
<400>2116
cagcacaccc aaacaacaca 20
<210>2117
<211>20
<212>DNA
<400>2117
gaccaagcca taagactcct 20
<210>2118
<211>20
<212>DNA
<400>2118
atgcgctgac gcaccttctt 20
<210>2119
<211>20
<212>DNA
<400>2119
cccaaagcca ttagacttcc 20
<210>2120
<211>20
<212>DNA
<400>2120
tttactttac gatttttatg 20
<210>2121
<211>20
<212>DNA
<400>2121
cagtagggcc acaacaaatc 20
<210>2122
<211>20
<212>DNA
<400>2122
gctgtaagct ctcccaacct 20
<210>2123
<211>20
<212>DNA
<400>2123
ccccctcctaa ttcttctgtg 20
<210>2124
<211>20
<212>DNA
<400>2124
ggagctatga ccccttatct 20
<210>2125
<211>20
<212>DNA
<400>2125

agaatcggaa accccacgca 20
<210>2126
<211>20
<212>DNA
<400>2126
cgagtgtctt tgttcagaag 20
<210>2127
<211>20
<212>DNA
<400>2127
ctcttggtta ttgcctatgg 20
<210>2128
<211>20
<212>DNA
<400>2128
aggggtcgc ccttttttta 20
<210>2129
<211>20
<212>DNA
<400>2129
ggttggtcga gctatacaga 20
<210>2130
<211>20
<212>DNA
<400>2130
ccgtcgtcag tcaaccaata 20
<210>2131
<211>20
<212>DNA
<400>2131
ggaacaggct cagatgattc 20
<210>2132
<211>20
<212>DNA
<400>2132
gctctctctt acccttcaga 20
<210>2133
<211>20
<212>DNA
<400>2133
ccctctcttc aagaggatga 20
<210>2134
<211>20
<212>DNA
<400>2134
cccgtgtttt gttggtttgc 20
<210>2135
<211>20
<212>DNA
<400>2135
taaaacgatc cgtcgtcagt 20
<210>2136
<211>20
<212>DNA
<400>2136
ctagccactc tggaactcta 20
<210>2137
<211>20
<212>DNA
<400>2137
gtcatgctca tagccaactc 20
<210>2138
<211>20
<212>DNA

<400>2138
 gcaaagtgtt atggcggaga 20
 <210>2139
 <211>20
 <212>DNA
 <400>2139
 cactctggaa ctctacctca 20
 <210>2140
 <211>20
 <212>DNA
 <400>2140
 ggaaagggga actccagaat 20
 <210>2141
 <211>20
 <212>DNA
 <400>2141
 cccttacgtt ggcattatgg 20
 <210>2142
 <211>20
 <212>DNA
 <400>2142
 ctttcgtggt ctctccaatg 20
 <210>2143
 <211>20
 <212>DNA
 <400>2143
 cccctcaaga atatctgagc 20
 <210>2144
 <211>20
 <212>DNA
 <400>2144
 ggattccaaa cctgcggtaa 20
 <210>2145
 <211>20
 <212>DNA
 <400>2145
 ccggatcttt caatgctagg 20
 <210>2146
 <211>20
 <212>DNA
 <400>2146
 caaggcacca cctatctaac 20
 <210>2147
 <211>20
 <212>DNA
 <400>2147
 aagaacagca gggacggccc 20
 <210>2148
 <211>20
 <212>DNA
 <400>2148
 ggcacccctg aaatcaaacg 20
 <210>2149
 <211>20
 <212>DNA
 <400>2149
 cgtctgtaca cgcctatcaa 20
 <210>2150
 <211>20
 <212>DNA
 <400>2150
 gagaatccct gccttttctc 20
 <210>2151
 <211>20

```

<212>DNA
<400>2151
cagtagaagt tccaaacctc      20
<210>2152
<211>20
<212>DNA
<400>2152
ggtggctgtg tcaaagttac      20
<210>2153
<211>20
<212>DNA
<400>2153
ttctctaaca aggaggcgag      20
<210>2154
<211>20
<212>DNA
<400>2154
gtctccacca acctacagta      20
<210>2155
<211>20
<212>DNA
<400>2155
aataagagtg gctgcagcac      20
<210>2156
<211>20
<212>DNA
<400>2156
caagatcttt ccatgacgca      20
<210>2157
<211>20
<212>DNA
<400>2157
cagcttggtt agcgcggttg      20
<210>2158
<211>20
<212>DNA
<400>2158
gggtagaatc gttccccata      20
<210>2159
<211>20
<212>DNA
<400>2159
ccctctgcat tactcacaga      20
<210>2160
<211>20
<212>DNA
<400>2160
ctggactctc caagatccta      20
<210>2161
<211>20
<212>DNA
<400>2161
gtacagtaga ttcgcgaacg      20
<210>2162
<211>20
<212>DNA
<400>2162
ccgtacgtag tgggtaaatg      20
<210>2163
<211>20
<212>DNA
<400>2163
ctgccattgc agtccttgct      20
<210>2164

```

<211>20
 <212>DNA
 <400>2164
 ccgccccgtt tcgatctaac 20
 <210>2165
 <211>20
 <212>DNA
 <400>2165
 cctgaaaacc tcaggaagag 20
 <210>2166
 <211>20
 <212>DNA
 <400>2166
 cccctgggtta agcaaaagag 20
 <210>2167
 <211>20
 <212>DNA
 <400>2167
 ctcccgagaa ggagggggaa 20
 <210>2168
 <211>20
 <212>DNA
 <400>2168
 gaacaactgc tgaacagcag 20
 <210>2169
 <211>20
 <212>DNA
 <400>2169
 tatgtcggaa agcgtccgtg 20
 <210>2170
 <211>20
 <212>DNA
 <400>2170
 gttccttacg aatcgctctc 20
 <210>2171
 <211>20
 <212>DNA
 <400>2171
 caggctaaca cagatatgcc 20
 <210>2172
 <211>20
 <212>DNA
 <400>2172
 cctaccagga cttaagatcg 20
 <210>2173
 <211>20
 <212>DNA
 <400>2173
 gggattcggt ctacgaacac 20
 <210>2174
 <211>20
 <212>DNA
 <400>2174
 cccaatctca caggccaaca 20
 <210>2175
 <211>20
 <212>DNA
 <400>2175
 ggaatggtag cctcagcaat 20
 <210>2176
 <211>20
 <212>DNA
 <400>2176
 gaggaagcag atgcactttc 20

<210>2177
<211>20
<212>DNA
<400>2177
ccatcaagtg ccttgcctat 20
<210>2178
<211>20
<212>DNA
<400>2178
cttgatcata ccgggaaacc 20
<210>2179
<211>20
<212>DNA
<400>2179
tataccttcca cactcaccct 20
<210>2180
<211>20
<212>DNA
<400>2180
ccaaaatccc cacttgcggg 20
<210>2181
<211>20
<212>DNA
<400>2181
ctgtcaccgt aggtactatg 20
<210>2182
<211>20
<212>DNA
<400>2182
ccccccctac aggaacaaca 20
<210>2183
<211>20
<212>DNA
<400>2183
cgaagcttta ggcttcctc 20
<210>2184
<211>20
<212>DNA
<400>2184
ccgagctgat acccttcaaa 20
<210>2185
<211>20
<212>DNA
<400>2185
gcaccattag caaaatcccc 20
<210>2186
<211>20
<212>DNA
<400>2186
ggcaccaaga agaaatccga 20
<210>2187
<211>20
<212>DNA
<400>2187
agagtctcgc gatccaaaga 20
<210>2188
<211>20
<212>DNA
<400>2188
gcgatgcac cccatagaaa 20
<210>2189
<211>20
<212>DNA
<400>2189

ttctagctga gatgagcctc 20
<210>2190
<211>20
<212>DNA
<400>2190
taaataagaca gggccgtctc 20
<210>2191
<211>20
<212>DNA
<400>2191
ggggcaagcg ttgaaatttg 20
<210>2192
<211>20
<212>DNA
<400>2192
ctgacaatga taccggggat 20
<210>2193
<211>20
<212>DNA
<400>2193
ggcgtaatag ggacttcaca 20
<210>2194
<211>20
<212>DNA
<400>2194
gtgctgtcat caacgctcta 20
<210>2195
<211>20
<212>DNA
<400>2195
ttcggactcc tgatgctccg 20
<210>2196
<211>20
<212>DNA
<400>2196
ccgtgtttta cgataggctc 20
<210>2197
<211>20
<212>DNA
<400>2197
cggaatctct ctctagactg 20
<210>2198
<211>20
<212>DNA
<400>2198
cgcctgggaa aagtcacaa 20
<210>2199
<211>20
<212>DNA
<400>2199
tggttggtgt gaagatcgag 20
<210>2200
<211>20
<212>DNA
<400>2200
cgcctgggaa aagtcacaa 20
<210>2201
<211>20
<212>DNA
<400>2201
ttggggatag aggttccggt 20
<210>2202
<211>20
<212>DNA

<400>2202
 ccgcaacttt tttagcaggc 20
 <210>2203
 <211>20
 <212>DNA
 <400>2203
 ctgaaaaagc ctgcacagga 20
 <210>2204
 <211>20
 <212>DNA
 <400>2204
 ggctgacgcc tctaaaagat 20
 <210>2205
 <211>20
 <212>DNA
 <400>2205
 gatccctctt caatactacg 20
 <210>2206
 <211>20
 <212>DNA
 <400>2206
 gcctaagagg acaatgcgtt 20
 <210>2207
 <211>20
 <212>DNA
 <400>2207
 gccatgcttt ctcgtagctg 20
 <210>2208
 <211>20
 <212>DNA
 <400>2208
 ccagaggctt gagcatgaaa 20
 <210>2209
 <211>20
 <212>DNA
 <400>2209
 cgctctctta gctgtagtct 20
 <210>2210
 <211>20
 <212>DNA
 <400>2210
 cgctcttcag gatctgcccc 20
 <210>2211
 <211>20
 <212>DNA
 <400>2211
 cgaacaccaa aacctgaagc 20
 <210>2212
 <211>20
 <212>DNA
 <400>2212
 ggtgaagaga gaactcacca 20
 <210>2213
 <211>20
 <212>DNA
 <400>2213
 ggtctaaacc tccagagtca 20
 <210>2214
 <211>20
 <212>DNA
 <400>2214
 cgccctggaa atttcttagc 20
 <210>2215
 <211>20

```

<212>DNA
<400>2215
gacatgaggg aatctccttg      20
<210>2216
<211>20
<212>DNA
<400>2216
ggccttgaat cgctgtgtct      20
<210>2217
<211>20
<212>DNA
<400>2217
ttatgcctct gatccttgcg      20
<210>2218
<211>20
<212>DNA
<400>2218
cctacctgaa gttctcccta      20
<210>2219
<211>20
<212>DNA
<400>2219
gcaagcagat agagcttctt      20
<210>2220
<211>20
<212>DNA
<400>2220
ccgcctatct cgagaattca      20
<210>2221
<211>20
<212>DNA
<400>2221
ctgagaatcc tgagatactc      20
<210>2222
<211>20
<212>DNA
<400>2222
ggagttacgt acagaagagc      20
<210>2223
<211>20
<212>DNA
<400>2223
gaggagcgga ctaaaatctc      20
<210>2224
<211>20
<212>DNA
<400>2224
cacctcagga gctgatgtta      20
<210>2225
<211>20
<212>DNA
<400>2225
agatggccct aaatgccgat      20
<210>2226
<211>20
<212>DNA
<400>2226
cctggcaact ctcgcataaa      20
<210>2227
<211>20
<212>DNA
<400>2227
ccgtagcccc tcttattctt      20
<210>2228

```

```

<211>20
<212>DNA
<400>2228
gaggacacgg ccctgaaacg      20
<210>2229
<211>20
<212>DNA
<400>2229
ccagattacg ctcctttcac      20
<210>2230
<211>20
<212>DNA
<400>2230
cgaagaactg cctatgcaaa      20
<210>2231
<211>20
<212>DNA
<400>2231
aagcagagag gcgattcccc      20
<210>2232
<211>20
<212>DNA
<400>2232
gtctgtacgt gttcgcggttt      20
<210>2233
<211>20
<212>DNA
<400>2233
catcgctccc acgagtattg      20
<210>2234
<211>20
<212>DNA
<400>2234
gggttggtta acctcacctc      20
<210>2235
<211>20
<212>DNA
<400>2235
gttagctctt agtggttgcg      20
<210>2236
<211>20
<212>DNA
<400>2236
gccctctcgt tctaacagaa      20
<210>2237
<211>20
<212>DNA
<400>2237
gagacggtct ctttgcttgt      20
<210>2238
<211>20
<212>DNA
<400>2238
cccaatccct cccataactt      20
<210>2239
<211>20
<212>DNA
<400>2239
gtggatcatc atcatcccag      20
<210>2240
<211>20
<212>DNA
<400>2240
ttctcaaaac atcgtgcagc      20

```


<210>2241
<211>20
<212>DNA
<400>2241
atgacgtacc ggcaatacga 20
<210>2242
<211>20
<212>DNA
<400>2242
cgactacgga cctaaagaac 20
<210>2243
<211>20
<212>DNA
<400>2243
cctcgtgaaa ttcctgacac 20
<210>2244
<211>20
<212>DNA
<400>2244
cacacaactc gccgcatccg 20
<210>2245
<211>20
<212>DNA
<400>2245
cgcgtttgct gtagcataac 20
<210>2246
<211>20
<212>DNA
<400>2246
ggattcgtca aacaacctcc 20
<210>2247
<211>20
<212>DNA
<400>2247
gctcggcact tacttcaaga 20
<210>2248
<211>20
<212>DNA
<400>2248
caggaccttt agcaagccga 20
<210>2249
<211>20
<212>DNA
<400>2249
aaaccatcca cacaactcgc 20
<210>2250
<211>20
<212>DNA
<400>2250
agcacaccct agaagggtat 20
<210>2251
<211>20
<212>DNA
<400>2251
ggcggattca tgctaaagat 20
<210>2252
<211>20
<212>DNA
<400>2252
ccctaacgcc gaaaacttct 20
<210>2253
<211>20
<212>DNA
<400>2253

tggatacggg gggggcatga 20
<210>2254
<211>20
<212>DNA
<400>2254
cagctcgttt actccatctc 20
<210>2255
<211>20
<212>DNA
<400>2255
ggtgcggaac tcatacacaat 20
<210>2256
<211>20
<212>DNA
<400>2256
gagctctaga tgacgtagtg 20
<210>2257
<211>20
<212>DNA
<400>2257
gagccgctca tacacctttt 20
<210>2258
<211>20
<212>DNA
<400>2258
gggcagactt tggagagcta 20
<210>2259
<211>20
<212>DNA
<400>2259
ccctaacgcc gaaaacttct 20
<210>2260
<211>20
<212>DNA
<400>2260
ctctggttac ctctccagta 20
<210>2261
<211>20
<212>DNA
<400>2261
ggctcttcaa gagcaacaag 20
<210>2262
<211>20
<212>DNA
<400>2262
ggcatcagag actgtaagtg 20
<210>2263
<211>20
<212>DNA
<400>2263
gctaatagcc tcacaagcag 20
<210>2264
<211>20
<212>DNA
<400>2264
ggctacaaaa gcggatgaag 20
<210>2265
<211>20
<212>DNA
<400>2265
ggcatcagag actgtaagtg 20
<210>2266
<211>20
<212>DNA

```

<400>2266
cccaaggagt caaatccgaa      20
<210>2267
<211>20
<212>DNA
<400>2267
cagcacatcc cctcatgatg      20
<210>2268
<211>20
<212>DNA
<400>2268
cttatcttgg cacgcataga      20
<210>2269
<211>20
<212>DNA
<400>2269
catggaagct gcttcgctat      20
<210>2270
<211>20
<212>DNA
<400>2270
gcgcaatcac tataaaccat      20
<210>2271
<211>20
<212>DNA
<400>2271
tttcgtgtgg aagaagttcc      20
<210>2272
<211>20
<212>DNA
<400>2272
gaggtttata acccatccgc      20
<210>2273
<211>20
<212>DNA
<400>2273
gaagcggcta caaaagcgga      20
<210>2274
<211>20
<212>DNA
<400>2274
acacagcctt acctccccct      20
<210>2275
<211>20
<212>DNA
<400>2275
accgtcaaag caagagacag      20
<210>2276
<211>20
<212>DNA
<400>2276
atatcgacag cgaaaggctg      20
<210>2277
<211>20
<212>DNA
<400>2277
ccgtctcatc aagactttgg      20
<210>2278
<211>20
<212>DNA
<400>2278
cggggaagagc tgctatttcc      20
<210>2279
<211>20

```

<212>DNA
 <400>2279
 agaggagtgt gcggtcagca 20
 <210>2280
 <211>20
 <212>DNA
 <400>2280
 cgcacgttcg gacataagaa 20
 <210>2281
 <211>20
 <212>DNA
 <400>2281
 ctggatcaca ggattgatcg 20
 <210>2282
 <211>20
 <212>DNA
 <400>2282
 ctactcgag ggaagttttc 20
 <210>2283
 <211>20
 <212>DNA
 <400>2283
 tgccccttcg aaaaggatca 20
 <210>2284
 <211>20
 <212>DNA
 <400>2284
 cctaacgaaa ccaacgatcc 20
 <210>2285
 <211>20
 <212>DNA
 <400>2285
 gggaaaacgc caagaagagc 20
 <210>2286
 <211>20
 <212>DNA
 <400>2286
 gggaaactca cgctctaaag 20
 <210>2287
 <211>20
 <212>DNA
 <400>2287
 ctggggagat gatgagttag 20
 <210>2288
 <211>20
 <212>DNA
 <400>2288
 ctctacgta ttgacggaac 20
 <210>2289
 <211>20
 <212>DNA
 <400>2289
 gcgtttacct gcggaggaag 20
 <210>2290
 <211>20
 <212>DNA
 <400>2290
 ggctacatag acgtgttttcg 20
 <210>2291
 <211>20
 <212>DNA
 <400>2291
 tggccgctcc tacaaccctt 20
 <210>2292

<211>20
<212>DNA
<400>2292
cggaggactt gcttttggtt 20
<210>2293
<211>20
<212>DNA
<400>2293
tccctccaac gatagtttgc 20
<210>2294
<211>20
<212>DNA
<400>2294
ggcaagagca attctatggg 20
<210>2295
<211>20
<212>DNA
<400>2295
cctatccttt gggaaggact 20
<210>2296
<211>20
<212>DNA
<400>2296
ggctgggtct tacttgatcat 20
<210>2297
<211>20
<212>DNA
<400>2297
cagttcgatt ctgcctatgc 20
<210>2298
<211>20
<212>DNA
<400>2298
ggcctcattg ctatggcttt 20
<210>2299
<211>20
<212>DNA
<400>2299
ctctgagggt tectatcctg 20
<210>2300
<211>20
<212>DNA
<400>2300
cagagtctca gttgagaacc 20
<210>2301
<211>20
<212>DNA
<400>2301
gaaactccag gtttaggagc 20
<210>2302
<211>20
<212>DNA
<400>2302
ggactagctg gatccataga 20
<210>2303
<211>20
<212>DNA
<400>2303
ctcctgacag tgtgagaatg 20
<210>2304
<211>20
<212>DNA
<400>2304
caccttctgg agcttcgtta 20

<210>2305
<211>20
<212>DNA
<400>2305
gaactcctta tgggggtttcg 20
<210>2306
<211>20
<212>DNA
<400>2306
gctatactcc ttagggagtc 20
<210>2307
<211>20
<212>DNA
<400>2307
cggggaacgt acttaggtaa 20
<210>2308
<211>20
<212>DNA
<400>2308
ggagaagagc tcttttgcac 20
<210>2309
<211>20
<212>DNA
<400>2309
gctttcatgc gctaccttag 20
<210>2310
<211>20
<212>DNA
<400>2310
agagaatcgt ccccaaccca 20
<210>2311
<211>20
<212>DNA
<400>2311
ccccctgttc tataaagcgt 20
<210>2312
<211>20
<212>DNA
<400>2312
gataccgttt cccatagagc 20
<210>2313
<211>20
<212>DNA
<400>2313
gctctgctta ggaacttgct 20
<210>2314
<211>20
<212>DNA
<400>2314
cctggagtgc acataaactc 20
<210>2315
<211>20
<212>DNA
<400>2315
cggactcaga gatctctaaa 20
<210>2316
<211>20
<212>DNA
<400>2316
agcgttcggc ctctgtcat 20
<210>2317
<211>20
<212>DNA
<400>2317

atttgctgcg gtactccaac 20
 <210>2318
 <211>20
 <212>DNA
 <400>2318
 gccgctgaag attttcctga 20
 <210>2319
 <211>20
 <212>DNA
 <400>2319
 cgacttctgg agattcgata 20
 <210>2320
 <211>20
 <212>DNA
 <400>2320
 tcccagactc tgtgatttcc 20
 <210>2321
 <211>20
 <212>DNA
 <400>2321
 ccaagagagg ttcgtaagga 20
 <210>2322
 <211>20
 <212>DNA
 <400>2322
 cgctatcctc ttcccaattc 20
 <210>2323
 <211>20
 <212>DNA
 <400>2323
 gctcacagaa gctgaaagtg 20
 <210>2324
 <211>20
 <212>DNA
 <400>2324
 cagcagctcc atacgacagt 20
 <210>2325
 <211>20
 <212>DNA
 <400>2325
 gcttgaagtc ccatatggac 20
 <210>2326
 <211>20
 <212>DNA
 <400>2326
 cagaaacagc cgaaacggaa 20
 <210>2327
 <211>20
 <212>DNA
 <400>2327
 ccctgatgtt gccctacaat 20
 <210>2328
 <211>20
 <212>DNA
 <400>2328
 ctctgctcag gtacaatacc 20
 <210>2329
 <211>20
 <212>DNA
 <400>2329
 aggaaacgag cgaacactct 20
 <210>2330
 <211>20
 <212>DNA

<400>2330
 cggtttgtct attgggaatg 20
 <210>2331
 <211>20
 <212>DNA
 <400>2331
 gggagaagat tcgacctgaa 20
 <210>2332
 <211>20
 <212>DNA
 <400>2332
 ccctctcata agcgagtctt 20
 <210>2333
 <211>20
 <212>DNA
 <400>2333
 gcgaaaaagg aatcgatcca 20
 <210>2334
 <211>20
 <212>DNA
 <400>2334
 cagccaagcg tggtaaaacg 20
 <210>2335
 <211>20
 <212>DNA
 <400>2335
 tcgctgcatt tgcgggacac 20
 <210>2336
 <211>20
 <212>DNA
 <400>2336
 ctgctatcgt cgttcctatc 20
 <210>2337
 <211>20
 <212>DNA
 <400>2337
 ctggctatat aggtgcggat 20
 <210>2338
 <211>20
 <212>DNA
 <400>2338
 ctcccctacc ctttaagcatt 20
 <210>2339
 <211>20
 <212>DNA
 <400>2339
 ggtcttagga gctcttaagg 20
 <210>2340
 <211>20
 <212>DNA
 <400>2340
 cattcagcca actctttggc 20
 <210>2341
 <211>20
 <212>DNA
 <400>2341
 gcccgagtaa ttcttcagca 20
 <210>2342
 <211>20
 <212>DNA
 <400>2342
 gcaaactgtg gaactcgta 20
 <210>2343
 <211>20


```

<212>DNA
<400>2343
cttagaggct attgatgggg      20
<210>2344
<211>20
<212>DNA
<400>2344
tgaaacccac tacgggtatc     20
<210>2345
<211>20
<212>DNA
<400>2345
agggtatcag aggggggaggg    20
<210>2346
<211>20
<212>DNA
<400>2346
agcgatgcta actggatggc     20
<210>2347
<211>20
<212>DNA
<400>2347
acagcactga caactgttcg     20
<210>2348
<211>20
<212>DNA
<400>2348
gaagtacgaa gttcttcacg     20
<210>2349
<211>20
<212>DNA
<400>2349
gctggaggtc ctactctatt     20
<210>2350
<211>20
<212>DNA
<400>2350
agctgcttat gagcttcgtg     20
<210>2351
<211>20
<212>DNA
<400>2351
ggagagactc ctactcttac     20
<210>2352
<211>20
<212>DNA
<400>2352
gacgaggaga agtcgaaaga     20
<210>2353
<211>20
<212>DNA
<400>2353
ctcttggtgg agacatcact     20
<210>2354
<211>20
<212>DNA
<400>2354
cgagagtgac accacgttta     20
<210>2355
<211>20
<212>DNA
<400>2355
ggatctctct tctcgatggg     20
<210>2356

```

WO 99/27105

<211>20
 <212>DNA
 <400>2356
 gcaactctaa tctttgcagc 20
 <210>2357
 <211>20
 <212>DNA
 <400>2357
 cgtggaaaac tacaggaacg 20
 <210>2358
 <211>20
 <212>DNA
 <400>2358
 gccgtattag cagtaatcgg 20
 <210>2359
 <211>20
 <212>DNA
 <400>2359
 ccgtctctgc aactctaate 20
 <210>2360
 <211>20
 <212>DNA
 <400>2360
 gcgctcgatt tattcccttc 20
 <210>2361
 <211>20
 <212>DNA
 <400>2361
 cttcacccct ataggcaaag 20
 <210>2362
 <211>20
 <212>DNA
 <400>2362
 cctgtgttag tacttccgtc 20
 <210>2363
 <211>20
 <212>DNA
 <400>2363
 tgcacctccg atagcatatc 20
 <210>2364
 <211>20
 <212>DNA
 <400>2364
 ccctagttct tctagggagt 20
 <210>2365
 <211>20
 <212>DNA
 <400>2365
 ctctggaggc tttacagagt 20
 <210>2366
 <211>20
 <212>DNA
 <400>2366
 aggtccctct atgcacacat 20
 <210>2367
 <211>20
 <212>DNA
 <400>2367
 gatgttggtta ccaaactccg 20
 <210>2368
 <211>20
 <212>DNA
 <400>2368
 cgaggcacia gcatcacaat 20

<210>2369
<211>20
<212>DNA
<400>2369
cggcgccata tctaccacaca 20
<210>2370
<211>20
<212>DNA
<400>2370
gagccctcta tggcaaaaag 20
<210>2371
<211>20
<212>DNA
<400>2371
ctccaggaac cactctgctc 20
<210>2372
<211>20
<212>DNA
<400>2372
cgtcacaatc ctgattgcga 20
<210>2373
<211>20
<212>DNA
<400>2373
gcgctatcta tgctaacgga 20
<210>2374
<211>20
<212>DNA
<400>2374
ccttattagg gaagggcctt 20
<210>2375
<211>20
<212>DNA
<400>2375
ccaagttagc cactctagga 20
<210>2376
<211>20
<212>DNA
<400>2376
aggagcctct gctctccaac 20
<210>2377
<211>20
<212>DNA
<400>2377
ctcgttttaa gaaacgggtgc 20
<210>2378
<211>20
<212>DNA
<400>2378
ctcctagcgc aaatactctc 20
<210>2379
<211>20
<212>DNA
<400>2379
gaggcatgcc tctttctttc 20
<210>2380
<211>20
<212>DNA
<400>2380
ccccctctct caagtctatt 20
<210>2381
<211>20
<212>DNA
<400>2381

cggtccaagg aaacatgctc 20
 <210>2382
 <211>20
 <212>DNA
 <400>2382
 cgacaactac gtctttctcc 20
 <210>2383
 <211>20
 <212>DNA
 <400>2383
 ctttcgggca gctttatgga 20
 <210>2384
 <211>20
 <212>DNA
 <400>2384
 gcctgtaaag cagagtatcc 20
 <210>2385
 <211>20
 <212>DNA
 <400>2385
 aggagtgtc ctaactgtc 20
 <210>2386
 <211>20
 <212>DNA
 <400>2386
 ggagacctga gaaagggtgt 20
 <210>2387
 <211>20
 <212>DNA
 <400>2387
 gcggattgca gcatctaaag 20
 <210>2388
 <211>20
 <212>DNA
 <400>2388
 cgaacggtag aaatccaaga 20
 <210>2389
 <211>20
 <212>DNA
 <400>2389
 cgaacggaat ctccagatcg 20
 <210>2390
 <211>20
 <212>DNA
 <400>2390
 ctctgagatc ccaaaatccc 20
 <210>2391
 <211>20
 <212>DNA
 <400>2391
 cgatctccaa agaactgacg 20
 <210>2392
 <211>20
 <212>DNA
 <400>2392
 ccctgacagg gaattctgaa 20
 <210>2393
 <211>20
 <212>DNA
 <400>2393
 tgcgtttcat tcgagagact 20
 <210>2394
 <211>20
 <212>DNA

<400>2394
catctgccaa gttcttcgct 20
<210>2395
<211>20
<212>DNA
<400>2395
taaccactcc atcccatga 20
<210>2396
<211>20
<212>DNA
<400>2396
cgtgggatac ctaagagaaa 20
<210>2397
<211>20
<212>DNA
<400>2397
cggcctgttt aattacagcg 20
<210>2398
<211>20
<212>DNA
<400>2398
cctgttgat taccgcattg 20
<210>2399
<211>20
<212>DNA
<400>2399
gggacaatcc ttcttcaga 20
<210>2400
<211>20
<212>DNA
<400>2400
gagaaccaag aggacgtgta 20
<210>2401
<211>20
<212>DNA
<400>2401
ttgagctgag tcacaagctg 20
<210>2402
<211>20
<212>DNA
<400>2402
cctgctgaga tattctgagg 20
<210>2403
<211>20
<212>DNA
<400>2403
tccacgtctc tgacggactg 20
<210>2404
<211>20
<212>DNA
<400>2404
cggatgtgca gattttctac 20
<210>2405
<211>20
<212>DNA
<400>2405
gaagtcgaac cetaagctgt 20
<210>2406
<211>20
<212>DNA
<400>2406
gcaaagagct tgatcctctg 20
<210>2407
<211>20

<212>DNA
 <400>2407
 gattcgccctg cgtaatcagt 20
 <210>2408
 <211>20
 <212>DNA
 <400>2408
 cctagtcttg ctcacagaaa 20
 <210>2409
 <211>20
 <212>DNA
 <400>2409
 gggaggcata ttttctaccc 20
 <210>2410
 <211>20
 <212>DNA
 <400>2410
 ggatgactcc tgcagtgtat 20
 <210>2411
 <211>20
 <212>DNA
 <400>2411
 atcctccata cagaaacgcc 20
 <210>2412
 <211>20
 <212>DNA
 <400>2412
 ctcgacatct acgcaccatc 20
 <210>2413
 <211>20
 <212>DNA
 <400>2413
 ccatagacga taaccctgga 20
 <210>2414
 <211>20
 <212>DNA
 <400>2414
 ggggctatac atgcactaga 20
 <210>2415
 <211>20
 <212>DNA
 <400>2415
 cgatccctac gacagtatag 20
 <210>2416
 <211>20
 <212>DNA
 <400>2416
 cgcagcatta atcaggacga 20
 <210>2417
 <211>20
 <212>DNA
 <400>2417
 caaatcgggtg tcacgctact 20
 <210>2418
 <211>20
 <212>DNA
 <400>2418
 tcacgacact actcatcagc 20
 <210>2419
 <211>20
 <212>DNA
 <400>2419
 gccctaggag tcattatctc 20
 <210>2420

<211>20
<212>DNA
<400>2420
ggaacaacct caaacactgc 20
<210>2421
<211>20
<212>DNA
<400>2421
cctcgatcac cagaattcca 20
<210>2422
<211>20
<212>DNA
<400>2422
cctcatcaac gacgacacat 20
<210>2423
<211>20
<212>DNA
<400>2423
caggaattgc agccttcgat 20
<210>2424
<211>20
<212>DNA
<400>2424
ctccgattcc tgatgccata 20
<210>2425
<211>20
<212>DNA
<400>2425
agggggaacg gctcatatct 20
<210>2426
<211>20
<212>DNA
<400>2426
cgatcgactt ctatccccat 20
<210>2427
<211>20
<212>DNA
<400>2427
gcctgacctc tcctgtaaaa 20
<210>2428
<211>20
<212>DNA
<400>2428
acgagacccc cataccctcc 20
<210>2429
<211>20
<212>DNA
<400>2429
ggatacgatc tctaaagccc 20
<210>2430
<211>20
<212>DNA
<400>2430
gccaccaact gccataattg 20
<210>2431
<211>20
<212>DNA
<400>2431
gccgaagaag agctctgaga 20
<210>2432
<211>20
<212>DNA
<400>2432
ggaatttggc actggcgaga 20

<210>2433
<211>20
<212>DNA
<400>2433
atcttgagcc gcctacgcca 20
<210>2434
<211>20
<212>DNA
<400>2434
ggataagaaa aagagccccg 20
<210>2435
<211>20
<212>DNA
<400>2435
caaaccctaa gcgacccctt 20
<210>2436
<211>20
<212>DNA
<400>2436
cagaagtcac tgcaagcccc 20
<210>2437
<211>20
<212>DNA
<400>2437
ggtcacttca tgacgactgt 20
<210>2438
<211>20
<212>DNA
<400>2438
caggacctct tggtaacct 20
<210>2439
<211>20
<212>DNA
<400>2439
gggcaacatg aatcaagcgg 20
<210>2440
<211>20
<212>DNA
<400>2440
gtggaagctg aggggtgtttt 20
<210>2441
<211>20
<212>DNA
<400>2441
ctgggtccacc tgttcaatca 20
<210>2442
<211>20
<212>DNA
<400>2442
cgggatttcc tgtgcctaaa 20
<210>2443
<211>20
<212>DNA
<400>2443
ggaagaggag agagcaaacg 20
<210>2444
<211>20
<212>DNA
<400>2444
gtacgggtag gccttgaaat 20
<210>2445
<211>20
<212>DNA
<400>2445

cacggctgga aaagatttcc 20
 <210>2446
 <211>20
 <212>DNA
 <400>2446
 cgacctgtgg gaaaatgaca 20
 <210>2447
 <211>20
 <212>DNA
 <400>2447
 atcccgcaat caaaggggct 20
 <210>2448
 <211>20
 <212>DNA
 <400>2448
 cctgagcatc cacataactca 20
 <210>2449
 <211>20
 <212>DNA
 <400>2449
 gcagaggaac cctgactcat 20
 <210>2450
 <211>20
 <212>DNA
 <400>2450
 gcccgcccaa taacaagaat 20
 <210>2451
 <211>20
 <212>DNA
 <400>2451
 tgtgcttcat agcgggcgac 20
 <210>2452
 <211>20
 <212>DNA
 <400>2452
 gcgctctata cgctaaattc 20
 <210>2453
 <211>20
 <212>DNA
 <400>2453
 ctcagcacag ttatatcccc 20
 <210>2454
 <211>20
 <212>DNA
 <400>2454
 tgacggggtg attctttctc 20
 <210>2455
 <211>20
 <212>DNA
 <400>2455
 ggaacagagg ttgccataag 20
 <210>2456
 <211>20
 <212>DNA
 <400>2456
 ggctaacgac gtcgctgcta 20
 <210>2457
 <211>20
 <212>DNA
 <400>2457
 gcagaaatgg ctgaactcct 20
 <210>2458
 <211>20
 <212>DNA

<400>2458
 ctctcttattc gacctgctct 20
 <210>2459
 <211>20
 <212>DNA
 <400>2459
 ctttaggaat ggggtggaacg 20
 <210>2460
 <211>20
 <212>DNA
 <400>2460
 gtgatggaga taacgtccag 20
 <210>2461
 <211>20
 <212>DNA
 <400>2461
 taacagccaa ttggaagaac 20
 <210>2462
 <211>20
 <212>DNA
 <400>2462
 agcttcctac caatctcacg 20
 <210>2463
 <211>20
 <212>DNA
 <400>2463
 gacaacacac tgacaggcta 20
 <210>2464
 <211>20
 <212>DNA
 <400>2464
 cctatgccct cttctgaaac 20
 <210>2465
 <211>20
 <212>DNA
 <400>2465
 ctacggtgct gagcttaaag 20
 <210>2466
 <211>20
 <212>DNA
 <400>2466
 cgatcatgag ctaactctgg 20
 <210>2467
 <211>20
 <212>DNA
 <400>2467
 ctctcgcgat cttctacctt 20
 <210>2468
 <211>20
 <212>DNA
 <400>2468
 gatacccatc ggcaattcca 20
 <210>2469
 <211>20
 <212>DNA
 <400>2469
 ctctgagctt acgctcttca 20
 <210>2470
 <211>20
 <212>DNA
 <400>2470
 cctccattgt aaccagagag 20
 <210>2471
 <211>20

<212>DNA
<400>2471
ttccacgcct ctcgacgttc 20
<210>2472
<211>20
<212>DNA
<400>2472
cgaaggagag gtcctcattg 20
<210>2473
<211>20
<212>DNA
<400>2473
cggtcacgga aggatttttcg 20
<210>2474
<211>20
<212>DNA
<400>2474
cctaccacac aagaatctgg 20
<210>2475
<211>20
<212>DNA
<400>2475
gcacgttggc aactttctct 20
<210>2476
<211>20
<212>DNA
<400>2476
cttcctaatac ggacctgtag 20
<210>2477
<211>20
<212>DNA
<400>2477
cgctagtctt agaagcgcaa 20
<210>2478
<211>20
<212>DNA
<400>2478
gctgtcttca tcgtaaagac 20
<210>2479
<211>20
<212>DNA
<400>2479
cctaatacgt ggggattatg 20
<210>2480
<211>20
<212>DNA
<400>2480
tctggagaag gattcctacc 20
<210>2481
<211>20
<212>DNA
<400>2481
cggttcacga atgaattggc 20
<210>2482
<211>20
<212>DNA
<400>2482
acctcccgcc atctctttat 20
<210>2483
<211>20
<212>DNA
<400>2483
gctgtcttca tcgtaaagac 20
<210>2484

<211>20
<212>DNA
<400>2484
gcctgtagcg tggattacaa 20
<210>2485
<211>20
<212>DNA
<400>2485
gtttcgcaag gagaatccag 20
<210>2486
<211>20
<212>DNA
<400>2486
gctgtgagtt aggctatacg 20
<210>2487
<211>20
<212>DNA
<400>2487
ctaggtctac aggatcctgt 20
<210>2488
<211>20
<212>DNA
<400>2488
gcgccgcat tgcgaacaat 20
<210>2489
<211>20
<212>DNA
<400>2489
gcgattgtca ccttaggaac 20
<210>2490
<211>20
<212>DNA
<400>2490
ctgacgacat agtactacaa 20
<210>2491
<211>20
<212>DNA
<400>2491
gggaaaggat tgtaccgaga 20
<210>2492
<211>20
<212>DNA
<400>2492
gatcgagatg aaagactcgg 20
<210>2493
<211>20
<212>DNA
<400>2493
ttacctcttc tggattcggg 20
<210>2494
<211>20
<212>DNA
<400>2494
cgagatggct agatccaaag 20
<210>2495
<211>20
<212>DNA
<400>2495
ctcttgacga tcaatcactg 20
<210>2496
<211>20
<212>DNA
<400>2496
gagctttagg tatectaggc 20

<210>2497
 <211>20
 <212>DNA
 <400>2497
 cccttggtcgt aaaactctcc 20
 <210>2498
 <211>20
 <212>DNA
 <400>2498
 gccctcggat tcaacatgat 20
 <210>2499
 <211>20
 <212>DNA
 <400>2499
 gtatctcaag agcttgcgga 20
 <210>2500
 <211>20
 <212>DNA
 <400>2500
 gtcccatggc caaagataac 20
 <210>2501
 <211>20
 <212>DNA
 <400>2501
 cccacctgaa aatgaggaac 20
 <210>2502
 <211>20
 <212>DNA
 <400>2502
 cagtacgaag cctccttcaa 20
 <210>2503
 <211>20
 <212>DNA
 <400>2503
 ctccctgcgta tctgttatgg 20
 <210>2504
 <211>20
 <212>DNA
 <400>2504
 cgcacttaca aaatcggcga 20
 <210>2505
 <211>20
 <212>DNA
 <400>2505
 ggtggagacg actttgatga 20
 <210>2506
 <211>20
 <212>DNA
 <400>2506
 tccgtagcgt cattcgaagc 20
 <210>2507
 <211>20
 <212>DNA
 <400>2507
 catcgtagtt ctccaaggag 20
 <210>2508
 <211>20
 <212>DNA
 <400>2508
 ggttcattgc agcagcagaa 20
 <210>2509
 <211>20
 <212>DNA
 <400>2509

ggctttgaat ttgagactgc 20
<210>2510
<211>20
<212>DNA
<400>2510
gtcccatgga gatttctcct 20
<210>2511
<211>20
<212>DNA
<400>2511
gagacttcga cgatgccatc 20
<210>2512
<211>20
<212>DNA
<400>2512
cacaggttta cctaagaccc 20
<210>2513
<211>20
<212>DNA
<400>2513
gctcttccag aatctatccc 20
<210>2514
<211>20
<212>DNA
<400>2514
gatcccgctt atcctcatgt 20
<210>2515
<211>20
<212>DNA
<400>2515
ccacgcctac aactacagaa 20
<210>2516
<211>20
<212>DNA
<400>2516
gcacagaacg aaatgtcgga 20
<210>2517
<211>20
<212>DNA
<400>2517
cgcagagcga aaagtcctaa 20
<210>2518
<211>20
<212>DNA
<400>2518
gagtcctact gcaaagctac 20
<210>2519
<211>20
<212>DNA
<400>2519
ggttcttacg ctcttagagc 20
<210>2520
<211>20
<212>DNA
<400>2520
gtttactctc ccctacgaac 20
<210>2521
<211>20
<212>DNA
<400>2521
ccctaaacca acgcttcttc 20
<210>2522
<211>20
<212>DNA

<400>2522
ccctaagttc agtgacccta 20
<210>2523
<211>20
<212>DNA
<400>2523
gtcctgacta cagtcccaaa 20
<210>2524
<211>20
<212>DNA
<400>2524
atcaggccag ggtcatgcca 20
<210>2525
<211>20
<212>DNA
<400>2525
gagaacctca tctcgagggg 20
<210>2526
<211>20
<212>DNA
<400>2526
cgggggtgga tgatcttaca 20
<210>2527
<211>20
<212>DNA
<400>2527
cagggtcact caggcagaca 20
<210>2528
<211>20
<212>DNA
<400>2528
ccgacgccta tagctatctc 20
<210>2529
<211>20
<212>DNA
<400>2529
gagtagcatc ctcagatcca 20
<210>2530
<211>20
<212>DNA
<400>2530
gcggggcccag cctcctcata 20
<210>2531
<211>20
<212>DNA
<400>2531
cgaagcggtta tattgccgca 20
<210>2532
<211>20
<212>DNA
<400>2532
cgcagctcag tagtgatgac 20
<210>2533
<211>20
<212>DNA
<400>2533
ggcttagact cgaattccga 20
<210>2534
<211>20
<212>DNA
<400>2534
gctcggcatt ctcttcta 20
<210>2535
<211>20

<212>DNA
<400>2535
agtagggaag tcacagagcc 20
<210>2536
<211>20
<212>DNA
<400>2536
gctaagtgag caatcgaca 20
<210>2537
<211>20
<212>DNA
<400>2537
gaactagacg tgtgctcaac 20
<210>2538
<211>20
<212>DNA
<400>2538
cctgcgtcca cagatcccc 20
<210>2539
<211>20
<212>DNA
<400>2539
cagcctgagg gacttttgta 20
<210>2540
<211>20
<212>DNA
<400>2540
caacgaaacc accgcaacca 20
<210>2541
<211>20
<212>DNA
<400>2541
gtcgcttcta catagacatc 20
<210>2542
<211>20
<212>DNA
<400>2542
caactgtaag agctttcgcc 20
<210>2543
<211>20
<212>DNA
<400>2543
caccatcatg tggttgtctg 20
<210>2544
<211>20
<212>DNA
<400>2544
taccaccata gctattgggc 20
<210>2545
<211>20
<212>DNA
<400>2545
gccatatcta cccacaagac 20
<210>2546
<211>20
<212>DNA
<400>2546
ggaagtgttc ttacaggaac 20
<210>2547
<211>20
<212>DNA
<400>2547
gcaagacctg tgatcagaga 20
<210>2548

<211>20
<212>DNA
<400>2548
gtaggagcca ttaagggtgac 20
<210>2549
<211>20
<212>DNA
<400>2549
ccctaagttc aaggtagcga 20
<210>2550
<211>20
<212>DNA
<400>2550
gcgtgaggaa cctcatctga 20
<210>2551
<211>20
<212>DNA
<400>2551
gcaacagaaa acactccgct 20
<210>2552
<211>20
<212>DNA
<400>2552
ggagaaaaga acagagcacg 20
<210>2553
<211>20
<212>DNA
<400>2553
cgccttatgc gcgtaaagaa 20
<210>2554
<211>20
<212>DNA
<400>2554
gaagcaacct cgtctccctc 20
<210>2555
<211>20
<212>DNA
<400>2555
ggaagaacag ctacaggact 20
<210>2556
<211>20
<212>DNA
<400>2556
ggccgacact tttaatgcca 20
<210>2557
<211>20
<212>DNA
<400>2557
gccaaaggcct ttgcaatact 20
<210>2558
<211>20
<212>DNA
<400>2558
gagtgtggaa ggaaaccgtt 20
<210>2559
<211>20
<212>DNA
<400>2559
ctcagcggac actcccaaact 20
<210>2560
<211>20
<212>DNA
<400>2560
gccaaagtcg agtctaagca 20

<210>2561
<211>20
<212>DNA
<400>2561
ctaaggtaac cccgacaaac 20
<210>2562
<211>20
<212>DNA
<400>2562
gcacatcaga aaatgcgacc 20
<210>2563
<211>20
<212>DNA
<400>2563
gactggcttt tatagccacg 20
<210>2564
<211>20
<212>DNA
<400>2564
cccaccccat ttaacaacag 20
<210>2565
<211>20
<212>DNA
<400>2565
gcgcaccaca ttaggattgt 20
<210>2566
<211>20
<212>DNA
<400>2566
ggtcaagacc aagttcatgc 20
<210>2567
<211>20
<212>DNA
<400>2567
agaaggcaag gctcccacac 20
<210>2568
<211>20
<212>DNA
<400>2568
cgacaccttt gatcggacta 20
<210>2569
<211>20
<212>DNA
<400>2569
atgggtcaca cgagctccac 20
<210>2570
<211>20
<212>DNA
<400>2570
ctataggaaa cgtcggggat 20
<210>2571
<211>20
<212>DNA
<400>2571
ctcaggaatc aatcccacag 20
<210>2572
<211>20
<212>DNA
<400>2572
gagccctact cctttgcttt 20
<210>2573
<211>20
<212>DNA
<400>2573

ggagaagaaa ttcctctcgc 20
 <210>2574
 <211>20
 <212>DNA
 <400>2574
 gcgaagttgc tagctaagaa 20
 <210>2575
 <211>20
 <212>DNA
 <400>2575
 tattttttgc ctccgcaggc 20
 <210>2576
 <211>20
 <212>DNA
 <400>2576
 ccttcgctga caaccaagaa 20
 <210>2577
 <211>20
 <212>DNA
 <400>2577
 ctacttcctg gttgggaaga 20
 <210>2578
 <211>20
 <212>DNA
 <400>2578
 cctctaggga aagaagctct 20
 <210>2579
 <211>20
 <212>DNA
 <400>2579
 tctattcaca gtggggcgat 20
 <210>2580
 <211>20
 <212>DNA
 <400>2580
 ttgctgtagg tggcatcact 20
 <210>2581
 <211>20
 <212>DNA
 <400>2581
 caagtcagca cctcgtaacat 20
 <210>2582
 <211>20
 <212>DNA
 <400>2582
 cgaaccacg gtacgcgta 20
 <210>2583
 <211>20
 <212>DNA
 <400>2583
 ggaaaccaca gccactacaa 20
 <210>2584
 <211>20
 <212>DNA
 <400>2584
 ggcagatcgt ttccacatgc 20
 <210>2585
 <211>20
 <212>DNA
 <400>2585
 ggcttcggct ataggatctt 20
 <210>2586
 <211>20
 <212>DNA

WO 99/27105

<400>2586
 ccgacgacaa acattgatcc 20
 <210>2587
 <211>20
 <212>DNA
 <400>2587
 gcattagctt ggcgtgagat 20
 <210>2588
 <211>20
 <212>DNA
 <400>2588
 ccgtgattca tttccccttc 20
 <210>2589
 <211>20
 <212>DNA
 <400>2589
 gagggatccg gtttgtattc 20
 <210>2590
 <211>20
 <212>DNA
 <400>2590
 gaggtacacg gctttaaaccc 20
 <210>2591
 <211>20
 <212>DNA
 <400>2591
 caaggagtta cgacaaggag 20
 <210>2592
 <211>20
 <212>DNA
 <400>2592
 ttgccaccat tgcctccgta 20
 <210>2593
 <211>20
 <212>DNA
 <400>2593
 ccgacgacaa acattgatcc 20
 <210>2594
 <211>20
 <212>DNA
 <400>2594
 gttgctcagg aacaacagag 20
 <210>2595
 <211>20
 <212>DNA
 <400>2595
 ttaggagcct ccgtagctgg 20
 <210>2596
 <211>20
 <212>DNA
 <400>2596
 tggccagagc cgggatcgaa 20
 <210>2597
 <211>20
 <212>DNA
 <400>2597
 ggaatttgca tcgcctactg 20
 <210>2598
 <211>20
 <212>DNA
 <400>2598
 gggattttatc ttgaggaggc 20
 <210>2599
 <211>20

```

<212>DNA
<400>2599
gttctaactc tacctgacgg      20
<210>2600
<211>20
<212>DNA
<400>2600
gagcaaaactc cgaagcgttt    20
<210>2601
<211>20
<212>DNA
<400>2601
gcccccttgtc ctttcttatg    20
<210>2602
<211>20
<212>DNA
<400>2602
gaacgtgttc ggagacctct     20
<210>2603
<211>20
<212>DNA
<400>2603
cgaagcaact tcccctagta     20
<210>2604
<211>20
<212>DNA
<400>2604
caagacgttt gtgagtacga     20
<210>2605
<211>20
<212>DNA
<400>2605
ccatctgagc tatctagcca     20
<210>2606
<211>20
<212>DNA
<400>2606
cagcaaaata gtctgctccc     20
<210>2607
<211>20
<212>DNA
<400>2607
cctgcaggaa gtgctaacat     20
<210>2608
<211>20
<212>DNA
<400>2608
gttgcagcag aggtaatcgt     20
<210>2609
<211>20
<212>DNA
<400>2609
ccctgatcga atccttttcag    20
<210>2610
<211>20
<212>DNA
<400>2610
cgacgggaac gaacttctaa     20
<210>2611
<211>20
<212>DNA
<400>2611
cccaggttcg ttaggttcta     20
<210>2612

```

<211>20
<212>DNA
<400>2612
gggaacgtat cctgcttgaa 20
<210>2613
<211>20
<212>DNA
<400>2613
ggcaaccact tgacaatcac 20
<210>2614
<211>20
<212>DNA
<400>2614
ggcaacaaaag tcctcattcg 20
<210>2615
<211>20
<212>DNA
<400>2615
gccgatgttt ctaattgcac 20
<210>2616
<211>20
<212>DNA
<400>2616
ccccttttca ggagcgtatt 20
<210>2617
<211>20
<212>DNA
<400>2617
gtgccgcctt gacatatata 20
<210>2618
<211>20
<212>DNA
<400>2618
gtgagcaaag gctttctgag 20
<210>2619
<211>20
<212>DNA
<400>2619
caacctcgca aagcttcttt 20
<210>2620
<211>20
<212>DNA
<400>2620
cgttctccta gtgtagttcc 20
<210>2621
<211>20
<212>DNA
<400>2621
ggcatgtgtg gaattggtgt 20
<210>2622
<211>20
<212>DNA
<400>2622
gccatactcg ttagcgcaag 20
<210>2623
<211>20
<212>DNA
<400>2623
gacataccgt tctcctagt 20
<210>2624
<211>20
<212>DNA
<400>2624
ccctcgtcaa taaagcgcat 20

<210>2625
<211>20
<212>DNA
<400>2625
cttcttttgag ggcagaactc 20
<210>2626
<211>20
<212>DNA
<400>2626
cttcataccc tgaaaacggc 20
<210>2627
<211>20
<212>DNA
<400>2627
cgaggggggaa atgaaattat 20
<210>2628
<211>20
<212>DNA
<400>2628
cgccagggac gttttttctaa 20
<210>2629
<211>20
<212>DNA
<400>2629
cataacctga gtcgcggtaa 20
<210>2630
<211>20
<212>DNA
<400>2630
gtgacgaccc tcattctagaa 20
<210>2631
<211>20
<212>DNA
<400>2631
gcttgagtga tcgaaaccca 20
<210>2632
<211>20
<212>DNA
<400>2632
ggctcgacag atggctgtat 20
<210>2633
<211>20
<212>DNA
<400>2633
gcgtgttggt cccttgcaat 20
<210>2634
<211>20
<212>DNA
<400>2634
aggcacagcc ctctttccct 20
<210>2635
<211>20
<212>DNA
<400>2635
cgcatttgag caacatcgct 20
<210>2636
<211>20
<212>DNA
<400>2636
caaagccaaa gcaaacacgc 20
<210>2637
<211>20
<212>DNA
<400>2637

gatcgtagaa gatccctggca 20
<210>2638
<211>20
<212>DNA
<400>2638
cgtcatgagt aagccgagta 20
<210>2639
<211>20
<212>DNA
<400>2639
cacatggagt cttgcagact 20
<210>2640
<211>20
<212>DNA
<400>2640
ctgacgacct ttcagaatct 20
<210>2641
<211>20
<212>DNA
<400>2641
agtgcacag gaactccaag 20
<210>2642
<211>20
<212>DNA
<400>2642
tgcgagttac ttcccgatgc 20
<210>2643
<211>20
<212>DNA
<400>2643
ctgaaatgga tatgcgagga 20
<210>2644
<211>20
<212>DNA
<400>2644
ctcagcttgg caactgtgta 20
<210>2645
<211>20
<212>DNA
<400>2645
cacacacacg tcaggtcatt 20
<210>2646
<211>20
<212>DNA
<400>2646
ggtattggta tgatggctgc 20
<210>2647
<211>20
<212>DNA
<400>2647
ccggtgcata cgggtgattta 20
<210>2648
<211>20
<212>DNA
<400>2648
ggctaaagac tttggagagg 20
<210>2649
<211>20
<212>DNA
<400>2649
gttccgatca tccctgtcta 20
<210>2650
<211>20
<212>DNA

<400>2650
ggagattcaa gaacctgctg 20
<210>2651
<211>20
<212>DNA
<400>2651
cacatgtgtg tccatgagtg 20
<210>2652
<211>20
<212>DNA
<400>2652
cgttccccctt tggcatcaaa 20
<210>2653
<211>20
<212>DNA
<400>2653
acgtaaagct ccgagagctt 20
<210>2654
<211>20
<212>DNA
<400>2654
ggagaaacaa gcagagctga 20
<210>2655
<211>20
<212>DNA
<400>2655
gagcttgcct acccaatttg 20
<210>2656
<211>20
<212>DNA
<400>2656
cgatacagat ccatccggtc 20
<210>2657
<211>20
<212>DNA
<400>2657
caagcagctt agttgcagca 20
<210>2658
<211>20
<212>DNA
<400>2658
cagggactgg aacacagaat 20
<210>2659
<211>20
<212>DNA
<400>2659
gcactctttt tctaccctcc 20
<210>2660
<211>20
<212>DNA
<400>2660
cccatgacca tacagtcac 20
<210>2661
<211>20
<212>DNA
<400>2661
accctctgca tggcgtcgtg 20
<210>2662
<211>20
<212>DNA
<400>2662
gtaaacgcag tgcaccttga 20
<210>2663
<211>20

<212>DNA
<400>2663
cgacaacatc tgaatacggc 20
<210>2664
<211>20
<212>DNA
<400>2664
ctccagcaac attcccattg 20
<210>2665
<211>20
<212>DNA
<400>2665
ggcatgttgc tacaatctcc 20
<210>2666
<211>20
<212>DNA
<400>2666
gagatcccca agcaatttcc 20
<210>2667
<211>20
<212>DNA
<400>2667
ctactagacg caaggggaaga 20
<210>2668
<211>20
<212>DNA
<400>2668
caaggacttc ctagagcttc 20
<210>2669
<211>20
<212>DNA
<400>2669
gtaaacgcag tgcaccttga 20
<210>2670
<211>20
<212>DNA
<400>2670
gttcgctggt gacttaggct 20
<210>2671
<211>20
<212>DNA
<400>2671
ctccagcaac attcccattg 20
<210>2672
<211>20
<212>DNA
<400>2672
ctgcaacaat accctggaga 20
<210>2673
<211>20
<212>DNA
<400>2673
caagagttct tgtctgcctc 20
<210>2674
<211>20
<212>DNA
<400>2674
gcactctgga ccgagacaat 20
<210>2675
<211>20
<212>DNA
<400>2675
cacctttact aggagtcacc 20
<210>2676

WO 99/27105

<211>20
 <212>DNA
 <400>2676
 ggcatctctt ggagagtttag 20
 <210>2677
 <211>20
 <212>DNA
 <400>2677
 ggccgaagtt tgctcgaaaa 20
 <210>2678
 <211>20
 <212>DNA
 <400>2678
 cgaacgatct ataccctgga 20
 <210>2679
 <211>20
 <212>DNA
 <400>2679
 ccataagaga gttcctgaga 20
 <210>2680
 <211>20
 <212>DNA
 <400>2680
 ctccggctcgc atacagaaat 20
 <210>2681
 <211>20
 <212>DNA
 <400>2681
 ccctctattt gcaaacgcga 20
 <210>2682
 <211>20
 <212>DNA
 <400>2682
 gaagggcctt ttccttgcta 20
 <210>2683
 <211>20
 <212>DNA
 <400>2683
 cgaacgatct ataccctgga 20
 <210>2684
 <211>20
 <212>DNA
 <400>2684
 ggacaagctc ttcactccat 20
 <210>2685
 <211>20
 <212>DNA
 <400>2685
 ccgaaggggt tctctatgat 20
 <210>2686
 <211>20
 <212>DNA
 <400>2686
 acgagttcgc ggatcttctt 20
 <210>2687
 <211>20
 <212>DNA
 <400>2687
 ccgatcaccg gcataattct 20
 <210>2688
 <211>20
 <212>DNA
 <400>2688
 ccagtaagtc tcagatcctc 20

<210>1409
<211>20
<212>DNA
<400>1409
cgtactaggg attgagcata 20
<210>1410
<211>20
<212>DNA
<400>1410
gagtgtctga cgtttctgag 20
<210>1411
<211>20
<212>DNA
<400>1411
ggaccgccat tacgagaaat 20
<210>1412
<211>20
<212>DNA
<400>1412
gagttgaact cctgccttga 20
<210>1413
<211>20
<212>DNA
<400>1413
atcagatcga agagctccag 20
<210>1414
<211>20
<212>DNA
<400>1414
ggtctaagca cgtaggttgt 20
<210>1415
<211>20
<212>DNA
<400>1415
gggatggcct taggtaaagt 20
<210>1416
<211>20
<212>DNA
<400>1416
ctgagagctg aacttgcttg 20
<210>1417
<211>20
<212>DNA
<400>1417
ctttggaaca tcgcaaagcg 20
<210>1418
<211>20
<212>DNA
<400>1418
cttggtaggg ttgtagagtc 20
<210>1419
<211>20
<212>DNA
<400>1419
gagttgaact cctgccttga 20
<210>1420
<211>20
<212>DNA
<400>1420
ggcatgttta tagtgtggcg 20
<210>1421
<211>20
<212>DNA
<400>1421

atgtgacagg tgctacccca 20
<210>1422
<211>20
<212>DNA
<400>1422
gagaatcaga ggcaagtcca 20
<210>1423
<211>20
<212>DNA
<400>1423
gaaggcttcc ttagtgagca 20
<210>1424
<211>20
<212>DNA
<400>1424
cagcgagttg cagcatttga 20
<210>1425
<211>20
<212>DNA
<400>1425
tcgcatgttt aggaccgctg 20
<210>1426
<211>20
<212>DNA
<400>1426
ttcctgaggc cccagaagag 20
<210>1427
<211>20
<212>DNA
<400>1427
gcatgttttag gaccgctgaa 20
<210>1428
<211>20
<212>DNA
<400>1428
ccatactctc tgatgcagcg 20
<210>1429
<211>20
<212>DNA
<400>1429
ggctcttaga gaaaccgagt 20
<210>1430
<211>20
<212>DNA
<400>1430
ctcggcaacg agttcaagaa 20
<210>1431
<211>20
<212>DNA
<400>1431
ggatatccag cacgtgctct 20
<210>1432
<211>20
<212>DNA
<400>1432
gttgtggctc aagaaggaca 20
<210>1433
<211>20
<212>DNA
<400>1433
gcgtgtgaaa gaagctgaag 20
<210>1434
<211>20
<212>DNA

<400>2714
gtgatcttag ggcgagtgtt 20
<210>2715
<211>20
<212>DNA
<400>2715
gcatcttgtc gactctttgc 20
<210>2716
<211>20
<212>DNA
<400>2716
gggataagga gcaaagactc 20
<210>2717
<211>20
<212>DNA
<400>2717
gccacccttc gatctgttta 20
<210>2718
<211>20
<212>DNA
<400>2718
caagaggggt tcgcagtaaa 20
<210>2719
<211>20
<212>DNA
<400>2719
cgctcttcct ttccttcttc 20
<210>2720
<211>20
<212>DNA
<400>2720
cgcaagacag aatgctggaa 20
<210>2721
<211>20
<212>DNA
<400>2721
ccgtatgcca atctgtcttg 20
<210>2722
<211>20
<212>DNA
<400>2722
ccactgcgca actatgtcaa 20
<210>2723
<211>20
<212>DNA
<400>2723
cgtcggcatg tattctagga 20
<210>2724
<211>20
<212>DNA
<400>2724
gtcccacagc cagtaaacad 20
<210>2725
<211>20
<212>DNA
<400>2725
ggctccacaa acaaagagga 20
<210>2726
<211>20
<212>DNA
<400>2726
caggaagttg ttctccgagt 20
<210>2727
<211>20

<212>DNA
 <400>2727
 cctattctgt tacgggaagc 20
 <210>2728
 <211>20
 <212>DNA
 <400>2728
 gatggtatcc tatccagggg 20
 <210>2729
 <211>20
 <212>DNA
 <400>2729
 ggaacatggt ggtagaggct 20
 <210>2730
 <211>20
 <212>DNA
 <400>2730
 ggcgatcttc agaagaaagc 20
 <210>2731
 <211>20
 <212>DNA
 <400>2731
 ggatgtttcc cgaaacaatc 20
 <210>2732
 <211>20
 <212>DNA
 <400>2732
 ccttttgccc tcccctccac 20
 <210>2733
 <211>20
 <212>DNA
 <400>2733
 tggggggtag tgtgtcatca 20
 <210>2734
 <211>20
 <212>DNA
 <400>2734
 tctggagaac ttctggagag 20
 <210>2735
 <211>20
 <212>DNA
 <400>2735
 gtcaggaatg tgcgtgcctt 20
 <210>2736
 <211>20
 <212>DNA
 <400>2736
 gtgggaactt atagtgaggc 20
 <210>2737
 <211>20
 <212>DNA
 <400>2737
 ctccgagata catgactcgt 20
 <210>2738
 <211>20
 <212>DNA
 <400>2738
 ctcaaagacg acctgagact 20
 <210>2739
 <211>20
 <212>DNA
 <400>2739
 cctggagtaa ataacccttc 20
 <210>2740

<211>20
<212>DNA
<400>2740
gaatggcttc cagaccttgt 20
<210>2741
<211>20
<212>DNA
<400>2741
ctttataaag cagtcccgtg 20
<210>2742
<211>20
<212>DNA
<400>2742
cgcctgacgg ctttgtttat 20
<210>2743
<211>20
<212>DNA
<400>2743
gcctgttgtc catacacgat 20
<210>2744
<211>20
<212>DNA
<400>2744
gaggaagcta tgagtgcgaa 20
<210>2745
<211>20
<212>DNA
<400>2745
ccctgtgtca aagctaaacc 20
<210>2746
<211>20
<212>DNA
<400>2746
ccttcccaac tttatggcgt 20
<210>2747
<211>20
<212>DNA
<400>2747
caggcaagct aacgaaggta 20
<210>2748
<211>20
<212>DNA
<400>2748
ctctcctcct cattcgaaag 20
<210>2749
<211>20
<212>DNA
<400>2749
tagtccccag aacaacatcg 20
<210>2750
<211>20
<212>DNA
<400>2750
cgtctgcatc ctattgaacc 20
<210>2751
<211>20
<212>DNA
<400>2751
tcgaaccctc ggtacccttt 20
<210>2752
<211>20
<212>DNA
<400>2752
ggttctcaat gcctccttag 20

<210>2753
<211>20
<212>DNA
<400>2753
cgcaatgcga atcagagtca 20
<210>2754
<211>20
<212>DNA
<400>2754
ctactacctg ccaattcctc 20
<210>2755
<211>20
<212>DNA
<400>2755
ggtgtgattt ctggagtcac 20
<210>2756
<211>20
<212>DNA
<400>2756
ggacgctctc tatgcacaaa 20
<210>2757
<211>20
<212>DNA
<400>2757
gggctgcata cccaagagat 20
<210>2758
<211>20
<212>DNA
<400>2758
aaacactctc gctcttctcg 20
<210>2759
<211>20
<212>DNA
<400>2759
gcactatctc gtcctgaagt 20
<210>2760
<211>20
<212>DNA
<400>2760
tagcgctgtt ccaactgcaat 20
<210>2761
<211>20
<212>DNA
<400>2761
gtccactact tcctaatacc 20
<210>2762
<211>20
<212>DNA
<400>2762
tccctagtgt ctaccattcc 20
<210>2763
<211>20
<212>DNA
<400>2763
gccaacggt ctgtaatagc 20
<210>2764
<211>20
<212>DNA
<400>2764
aacctcatag tctccggcag 20
<210>2765
<211>20
<212>DNA
<400>2765

ggcatagcca tacccttctc 20
<210>2766
<211>20
<212>DNA
<400>2766
cgtccatgtg tagagtcgaa 20
<210>2767
<211>20
<212>DNA
<400>2767
gacagtctgt tcagagaagc 20
<210>2768
<211>20
<212>DNA
<400>2768
accataagcc gtccaatagc 20
<210>2769
<211>20
<212>DNA
<400>2769
ccgcagaagt aactactgga 20
<210>2770
<211>20
<212>DNA
<400>2770
cttcaaagtc cccttcttgc 20
<210>2771
<211>20
<212>DNA
<400>2771
gtcttcgata ggaacccgaa 20
<210>2772
<211>20
<212>DNA
<400>2772
gcctgtcata gcaaacgaga 20
<210>2773
<211>20
<212>DNA
<400>2773
gcagtagcag catgaactgt 20
<210>2774
<211>20
<212>DNA
<400>2774
ggcagcaaag gctgaagatt 20
<210>2775
<211>20
<212>DNA
<400>2775
cgaggacttc tactgaagag 20
<210>2776
<211>20
<212>DNA
<400>2776
gagttcagtc gtcctacttc 20
<210>2777
<211>20
<212>DNA
<400>2777
tgtcggcgta gttcttttagc 20
<210>2778
<211>20
<212>DNA

<400>2778
 gcaaaagcgc ctccagaaaa 20
 <210>2779
 <211>20
 <212>DNA
 <400>2779
 gctccagtag ccttcaaaca 20
 <210>2780
 <211>20
 <212>DNA
 <400>2780
 cggctaaacg tcctgtagta 20
 <210>2781
 <211>20
 <212>DNA
 <400>2781
 ctcgataaga atggatggcg 20
 <210>2782
 <211>20
 <212>DNA
 <400>2782
 caactcgatc aagttgaagg 20
 <210>2783
 <211>20
 <212>DNA
 <400>2783
 ggatttttct cactccctcg 20
 <210>2784
 <211>20
 <212>DNA
 <400>2784
 ctcgcaaagc tcttcgtctt 20
 <210>2785
 <211>20
 <212>DNA
 <400>2785
 ggatagaatt ccaagggcga 20
 <210>2786
 <211>20
 <212>DNA
 <400>2786
 gcatacagct aggtctatcg 20
 <210>2787
 <211>20
 <212>DNA
 <400>2787
 gcaaaagcgc ctccagaaaa 20
 <210>2788
 <211>20
 <212>DNA
 <400>2788
 gataccggtt tcagttggtg 20
 <210>2789
 <211>20
 <212>DNA
 <400>2789
 cggctaaacg tcctgtagta 20
 <210>2790
 <211>20
 <212>DNA
 <400>2790
 ccggcaatag aatttcgagc 20
 <210>2791
 <211>20

<212>DNA
<400>2791
gcatctgtga gttcattggc 20
<210>2792
<211>20
<212>DNA
<400>2792
cgaacgttta caccttcgac 20
<210>2793
<211>20
<212>DNA
<400>2793
ggctttgtag gggaaccttt 20
<210>2794
<211>20
<212>DNA
<400>2794
cgtgtgcgca cgatcacagc 20
<210>2795
<211>20
<212>DNA
<400>2795
ccaactgctt atcaagccct 20
<210>2796
<211>20
<212>DNA
<400>2796
cactagccat ggactttacc 20
<210>2797
<211>20
<212>DNA
<400>2797
cataactccc tgagaagtgg 20
<210>2798
<211>20
<212>DNA
<400>2798
catacgagtt tctgcaggct 20
<210>2799
<211>20
<212>DNA
<400>2799
atattcaatc cctgggtgcg 20
<210>2800
<211>20
<212>DNA
<400>2800
cggtttggat ggtcacttca 20
<210>2801
<211>20
<212>DNA
<400>2801
cgaacgttta caccttcgac 20
<210>2802
<211>20
<212>DNA
<400>2802
ctcgaacttc ggtaacgctt 20
<210>2803
<211>20
<212>DNA
<400>2803
cagctttgat aacgtctccc 20
<210>2804

<211>20
<212>DNA
<400>2804
ccttttcttca caggatggct 20
<210>2805
<211>20
<212>DNA
<400>2805
cttttagttc agtgtgagcg 20
<210>2806
<211>20
<212>DNA
<400>2806
gccacgatga cggcaggata 20
<210>2807
<211>20
<212>DNA
<400>2807
gaagaggagt tctctccaag 20
<210>2808
<211>20
<212>DNA
<400>2808
ggcgggttga ggttttacat 20
<210>2809
<211>20
<212>DNA
<400>2809
cagatcaact tcagcgcctt 20
<210>2810
<211>20
<212>DNA
<400>2810
cgggaattac ccgtacctt 20
<210>2811
<211>20
<212>DNA
<400>2811
cccaccatag tttctgaaac 20
<210>2812
<211>20
<212>DNA
<400>2812
gagaccgcat aaacttatcc 20
<210>2813
<211>20
<212>DNA
<400>2813
ctcttccacc agaactcttc 20
<210>2814
<211>20
<212>DNA
<400>2814
gctttcctct tggaggaaca 20
<210>2815
<211>20
<212>DNA
<400>2815
gcgcaactca ccacgcgttg 20
<210>2816
<211>20
<212>DNA
<400>2816
gttgccccta caaactttgc 20

<210>2817
<211>20
<212>DNA
<400>2817
ctgctacttc aacttcgcct 20
<210>2818
<211>20
<212>DNA
<400>2818
gctccatagg caaccacaat 20
<210>2819
<211>20
<212>DNA
<400>2819
cagaggggga agatttttac 20
<210>2820
<211>20
<212>DNA
<400>2820
gcgaactctc gaatttcgca 20
<210>2821
<211>20
<212>DNA
<400>2821
cagaaaccgc cttacttagc 20
<210>2822
<211>20
<212>DNA
<400>2822
gcttgggcca aagcttctaa 20
<210>2823
<211>20
<212>DNA
<400>2823
acagtcccgg gggctccata 20
<210>2824
<211>20
<212>DNA
<400>2824
cgtactgggt catcggcaaa 20
<210>2825
<211>20
<212>DNA
<400>2825
gcatccatac ggatgacagt 20
<210>2826
<211>20
<212>DNA
<400>2826
cgattacagc actacccta 20
<210>2827
<211>20
<212>DNA
<400>2827
cgcttacttg ggctttgaca 20
<210>2828
<211>20
<212>DNA
<400>2828
gatccgagag catccaagaa 20
<210>2829
<211>20
<212>DNA
<400>2829

catcagaggg aaaagctgct 20
 <210>2830
 <211>20
 <212>DNA
 <400>2830
 ggctaaacga tcgagcaaac 20
 <210>2831
 <211>20
 <212>DNA
 <400>2831
 gggtaatctc cacaataccc 20
 <210>2832
 <211>20
 <212>DNA
 <400>2832
 cgaacagcgg caatttcaat 20
 <210>2833
 <211>20
 <212>DNA
 <400>2833
 gaagagtgag cacccataac 20
 <210>2834
 <211>20
 <212>DNA
 <400>2834
 ggcacaaccg cttaggttca 20
 <210>2835
 <211>20
 <212>DNA
 <400>2835
 gtccttagag gtaatgaggg 20
 <210>2836
 <211>20
 <212>DNA
 <400>2836
 cagagccgag aattatgttg 20
 <210>2837
 <211>20
 <212>DNA
 <400>2837
 cgatgattcc catcataggg 20
 <210>2838
 <211>20
 <212>DNA
 <400>2838
 cggatgctca ctcttatctt 20
 <210>2839
 <211>20
 <212>DNA
 <400>2839
 cgaaagtaaa gcgaacagcg 20
 <210>2840
 <211>20
 <212>DNA
 <400>2840
 gcctgaagat ggcaaggaaa 20
 <210>2841
 <211>20
 <212>DNA
 <400>2841
 aggacatcgt cttcttctgc 20
 <210>2842
 <211>20
 <212>DNA

<400>2842
cttgcgtaat tggcgtgcta 20
<210>2843
<211>20
<212>DNA
<400>2843
acaggacgaa ggcttagagc 20
<210>2844
<211>20
<212>DNA
<400>2844
agacgtggac atactttccc 20
<210>2845
<211>20
<212>DNA
<400>2845
ccaacttctg tacttcagcc 20
<210>2846
<211>20
<212>DNA
<400>2846
gcatgcgctt cccaaagtta 20
<210>2847
<211>20
<212>DNA
<400>2847
cccatcctgc caattgaaca 20
<210>2848
<211>20
<212>DNA
<400>2848
gcgagctatc cactagagaa 20
<210>2849
<211>20
<212>DNA
<400>2849
ggccccgtgt tcaagaaaag 20
<210>2850
<211>20
<212>DNA
<400>2850
cagcagcaga actctctcat 20
<210>2851
<211>20
<212>DNA
<400>2851
cctgcctaag cctaagtcac 20
<210>2852
<211>20
<212>DNA
<400>2852
cctggctcac ggacattagt 20
<210>2853
<211>20
<212>DNA
<400>2853
tacaggggtt catgctgctg 20
<210>2854
<211>20
<212>DNA
<400>2854
tcagcagcaa gccgcataat 20
<210>2855
<211>20

<212>DNA
<400>2855
gagagagatc atcatgggtcc 20
<210>2856
<211>20
<212>DNA
<400>2856
cctagggaca tcttgcgtaa 20
<210>2857
<211>20
<212>DNA
<400>2857
gaagtttgct gtccttcgtg 20
<210>2858
<211>20
<212>DNA
<400>2858
gcaagctaag aaagagcctc 20
<210>2859
<211>20
<212>DNA
<400>2859
gacgacgcgt atttcgtttg 20
<210>2860
<211>20
<212>DNA
<400>2860
ggagataaga ctcacaggca 20
<210>2861
<211>20
<212>DNA
<400>2861
caaaaggagg cactctcgaa 20
<210>2862
<211>20
<212>DNA
<400>2862
ctcccataga ggagacttag 20
<210>2863
<211>20
<212>DNA
<400>2863
gagaagcaac aaaagcagca 20
<210>2864
<211>20
<212>DNA
<400>2864
gtcagtgtta gcatcagtgc 20
<210>2865
<211>20
<212>DNA
<400>2865
gtcgattaga gggcttccca 20
<210>2866
<211>20
<212>DNA
<400>2866
gggataatcc ccatcactta 20
<210>2867
<211>20
<212>DNA
<400>2867
caggaacgag ccaaatagca 20
<210>2868

<211>20
<212>DNA
<400>2868
cgatccttag acccccaaaga 20
<210>2869
<211>20
<212>DNA
<400>2869
cggatatttaa cgagccgcta 20
<210>2870
<211>20
<212>DNA
<400>2870
gtggtactta gagcttttct 20
<210>2871
<211>20
<212>DNA
<400>2871
gttagggaaa tgccctgaga 20
<210>2872
<211>20
<212>DNA
<400>2872
ctgaggcgtg ctcttctgac 20
<210>2873
<211>20
<212>DNA
<400>2873
ctcctcggcc tgttcttctc 20
<210>2874
<211>20
<212>DNA
<400>2874
ccgcgagctt catattctac 20
<210>2875
<211>20
<212>DNA
<400>2875
gctggttccc aataagagag 20
<210>2876
<211>20
<212>DNA
<400>2876
gaaggattga ttcccattgc 20
<210>2877
<211>20
<212>DNA
<400>2877
gagagccttt tggagacttc 20
<210>2878
<211>20
<212>DNA
<400>2878
gaggagtcct ctggtgaaaa 20
<210>2879
<211>20
<212>DNA
<400>2879
ctgggtctaa tgtaggtcct 20
<210>2880
<211>20
<212>DNA
<400>2880
ggtcgcccta aatgactcat 20

<210>2881
<211>20
<212>DNA
<400>2881
tgccggacgt tttgcattag 20
<210>2882
<211>20
<212>DNA
<400>2882
ggtcggcccta aatgactcat 20
<210>2883
<211>20
<212>DNA
<400>2883
tgcgttgccg gacgttttgc 20
<210>2884
<211>20
<212>DNA
<400>2884
gctcgagata tcggcatgaa 20
<210>2885
<211>20
<212>DNA
<400>2885
aggcatcgca ctgcgaatac 20
<210>2886
<211>20
<212>DNA
<400>2886
cccagaggca atcataggat 20
<210>2887
<211>20
<212>DNA
<400>2887
gctttcacat cgctaggcaa 20
<210>2888
<211>20
<212>DNA
<400>2888
ccccaaatga actttcaagc 20
<210>2889
<211>20
<212>DNA
<400>2889
gaggcacatg atgtcctaag 20
<210>2890
<211>20
<212>DNA
<400>2890
ctcatcccta taccggagat 20
<210>2891
<211>20
<212>DNA
<400>2891
ggggagagaa tccagctaata 20
<210>2892
<211>20
<212>DNA
<400>2892
cactgagtgt cccatggctg 20
<210>2893
<211>20
<212>DNA
<400>2893

gcatctcttaa accccgtgtt 20
<210>2894
<211>20
<212>DNA
<400>2894
gcttttcctgg atcgtcttag 20
<210>2895
<211>20
<212>DNA
<400>2895
gacgtgctcg tgctctatgc 20
<210>2896
<211>20
<212>DNA
<400>2896
gtcttctttg ctcgcagaca 20
<210>2897
<211>20
<212>DNA
<400>2897
gtactagcaa cggtaaggga 20
<210>2898
<211>20
<212>DNA
<400>2898
cgcatgtata gcgatggaga 20
<210>2899
<211>20
<212>DNA
<400>2899
ggaaagccaa gcttccaact 20
<210>2900
<211>20
<212>DNA
<400>2900
gcagatcact acccctattc 20
<210>2901
<211>20
<212>DNA
<400>2901
ctcagtcaca atatctcctg 20
<210>2902
<211>20
<212>DNA
<400>2902
catcccaaag ctgaacgtct 20
<210>2903
<211>20
<212>DNA
<400>2903
gagcctacta cgcaggactc 20
<210>2904
<211>20
<212>DNA
<400>2904
tccgtgacgt tcctagagga 20
<210>2905
<211>20
<212>DNA
<400>2905
cccctaaagt aatcacaggg 20
<210>2906
<211>20
<212>DNA

<400>2906
ctgggataac gaaggttcgt 20
<210>2907
<211>20
<212>DNA
<400>2907
cctaagccta aaactccagc 20
<210>2908
<211>20
<212>DNA
<400>2908
cgctcttctg gcaacataga 20
<210>2909
<211>20
<212>DNA
<400>2909
gagtcgttgc agctgaatct 20
<210>2910
<211>20
<212>DNA
<400>2910
cttgaaagac gaacctaccc 20
<210>2911
<211>20
<212>DNA
<400>2911
tcttgattcg cacgacggcg 20
<210>2912
<211>20
<212>DNA
<400>2912
ggagactctt ccagtctcta 20
<210>2913
<211>20
<212>DNA
<400>2913
cgcatagccg ccatacctcca 20
<210>2914
<211>20
<212>DNA
<400>2914
cgtcccctct tcataaggaa 20
<210>2915
<211>20
<212>DNA
<400>2915
cccagcacat gattcgttga 20
<210>2916
<211>20
<212>DNA
<400>2916
caagggaaca aaggaggaag 20
<210>2917
<211>20
<212>DNA
<400>2917
ccagtcttaa gcacctctac 20
<210>2918
<211>20
<212>DNA
<400>2918
cttggttgaa atatgcggct 20
<210>2919
<211>20

```

<212>DNA
<400>2919
ggattaagat atgccccctct 20
<210>2920
<211>20
<212>DNA
<400>2920
cccctacttc acatcacatc 20
<210>2921
<211>20
<212>DNA
<400>2921
cggtcggtttc atgctatgga 20
<210>2922
<211>20
<212>DNA
<400>2922
cccctgtaat gatgactctc 20
<210>2923
<211>20
<212>DNA
<400>2923
actggatccg ctgctgcaaa 20
<210>2924
<211>20
<212>DNA
<400>2924
gttcctgctg aagctattgc 20
<210>2925
<211>20
<212>DNA
<400>2925
cacttactgc agaagctcgt 20
<210>2926
<211>20
<212>DNA
<400>2926
gcatgtagac ggtgtctatg 20
<210>2927
<211>20
<212>DNA
<400>2927
cgttggctag gcggaatggt 20
<210>2928
<211>20
<212>DNA
<400>2928
ggttcgaatc cccttggggt 20
<210>2929
<211>20
<212>DNA
<400>2929
cgaactcaga gcagtgacta 20
<210>2930
<211>20
<212>DNA
<400>2930
ggctgccacc aatgttatac 20
<210>2931
<211>20
<212>DNA
<400>2931
ggctaagcaa actagacgag 20
<210>2932

```

<211>20
<212>DNA
<400>2932
tgcccaaagc cgggatcgaa 20
<210>2933
<211>20
<212>DNA
<400>2933
cattttattcg tcttggtcccc 20
<210>2934
<211>20
<212>DNA
<400>2934
gccagagtac caagaacatc 20
<210>2935
<211>20
<212>DNA
<400>2935
gccaacttga gctgaaagag 20
<210>2936
<211>20
<212>DNA
<400>2936
ccgctttgtc aatcgctctt 20
<210>2937
<211>20
<212>DNA
<400>2937
gatccttcat cagcttccca 20
<210>2938
<211>20
<212>DNA
<400>2938
cctggagtggt ttttcttggt 20
<210>2939
<211>20
<212>DNA
<400>2939
cctgagccat gattctagga 20
<210>2940
<211>20
<212>DNA
<400>2940
ggctctgtgc ttccttaaga 20
<210>2941
<211>20
<212>DNA
<400>2941
ggttggacgt ctttctctgt 20
<210>2942
<211>20
<212>DNA
<400>2942
acgccgaatt ctttcgtagc 20
<210>2943
<211>20
<212>DNA
<400>2943
ggactgtaac ctaaccacag 20
<210>2944
<211>20
<212>DNA
<400>2944
gctcttcctc tttggatcct 20

<210>2945
 <211>20
 <212>DNA
 <400>2945
 gagggggaag gagaaaaaac 20
 <210>2946
 <211>20
 <212>DNA
 <400>2946
 gcttggttgta ccttcgtcca 20
 <210>2947
 <211>20
 <212>DNA
 <400>2947
 cgctttcttc ggtttcagga 20
 <210>2948
 <211>20
 <212>DNA
 <400>2948
 cctaaaggag agagaaaggc 20
 <210>2949
 <211>20
 <212>DNA
 <400>2949
 gcgttctcag caaggcaaaa 20
 <210>2950
 <211>20
 <212>DNA
 <400>2950
 ctgcatcatt gccatcggat 20
 <210>2951
 <211>20
 <212>DNA
 <400>2951
 cgttcagctt ctttctctcg 20
 <210>2952
 <211>20
 <212>DNA
 <400>2952
 ggcgttcttc agcatcgaaa 20
 <210>2953
 <211>20
 <212>DNA
 <400>2953
 tcctgctacc aagacggat 20
 <210>2954
 <211>20
 <212>DNA
 <400>2954
 gatggttgac accgattcca 20
 <210>2955
 <211>20
 <212>DNA
 <400>2955
 cgacgattgg tcagaagtag 20
 <210>2956
 <211>20
 <212>DNA
 <400>2956
 cgactgttgt tgcccaaaag 20
 <210>2957
 <211>20
 <212>DNA
 <400>2957

ggggtgcacg aaaaatagg 20
<210>2958
<211>20
<212>DNA
<400>2958
actatagtat cagcgggggc 20
<210>2959
<211>20
<212>DNA
<400>2959
cttgatgcaa gacgatgagc 20
<210>2960
<211>20
<212>DNA
<400>2960
cggcactgtc agaatcttct 20
<210>2961
<211>20
<212>DNA
<400>2961
catagcgcgt ctagcatctt 20
<210>2962
<211>20
<212>DNA
<400>2962
ggatcgctac gccatttaca 20
<210>2963
<211>20
<212>DNA
<400>2963
gaagatggcc tgcaattgct 20
<210>2964
<211>20
<212>DNA
<400>2964
tgcagaaaca gcattgagcg 20
<210>2965
<211>20
<212>DNA
<400>2965
cccgtcatta ccgacagtaa 20
<210>2966
<211>20
<212>DNA
<400>2966
gagttccaag gattctgtcc 20
<210>2967
<211>20
<212>DNA
<400>2967
gtatcagcag atggaggcaa 20
<210>2968
<211>20
<212>DNA
<400>2968
cctgatacta gtatcttccc 20
<210>2969
<211>20
<212>DNA
<400>2969
ccttctttgg tgcattgcag 20
<210>2970
<211>20
<212>DNA

<400>2970
gggaatacac agattcggtc 20
<210>2971
<211>20
<212>DNA
<400>2971
tccttccctt cctttagagc 20
<210>2972
<211>20
<212>DNA
<400>2972
ggcgttacag caatttgga 20
<210>2973
<211>20
<212>DNA
<400>2973
gcaggcctat gttttgcagt 20
<210>2974
<211>20
<212>DNA
<400>2974
gtgtacctga gtacatgacg 20
<210>2975
<211>20
<212>DNA
<400>2975
cactcttgcc tctttagaa 20
<210>2976
<211>20
<212>DNA
<400>2976
tgcttgtcaa actgccatcg 20
<210>2977
<211>20
<212>DNA
<400>2977
cgactcagtc ctttagctcg 20
<210>2978
<211>20
<212>DNA
<400>2978
ccagaaaccc ggcaattttg 20
<210>2979
<211>20
<212>DNA
<400>2979
catggacact taggagagag 20
<210>2980
<211>20
<212>DNA
<400>2980
cgagcaaagg aaatccctca 20
<210>2981
<211>20
<212>DNA
<400>2981
ctttaagggtt gctggcctgt 20
<210>2982
<211>20
<212>DNA
<400>2982
gctctatcta cagaaagcgg 20
<210>2983
<211>20

<212>DNA
 <400>2983
 actgcaaaaa cgcggcaggc 20
 <210>2984
 <211>20
 <212>DNA
 <400>2984
 caccgcgatc tcagggcata 20
 <210>2985
 <211>20
 <212>DNA
 <400>2985
 gaggatatgc gttccctctt 20
 <210>2986
 <211>20
 <212>DNA
 <400>2986
 cgaatgtaga tcctctcgtc 20
 <210>2987
 <211>20
 <212>DNA
 <400>2987
 gaattccacc tccttacctg 20
 <210>2988
 <211>20
 <212>DNA
 <400>2988
 aagcaagcgt cttcatacgc 20
 <210>2989
 <211>20
 <212>DNA
 <400>2989
 ccccacctgg gatcaattat 20
 <210>2990
 <211>20
 <212>DNA
 <400>2990
 gagaccttca gggaaaccta 20
 <210>2991
 <211>20
 <212>DNA
 <400>2991
 atacctcacc cggatctcag 20
 <210>2992
 <211>20
 <212>DNA
 <400>2992
 ggcaaaaatc ctgtagatcc 20
 <210>2993
 <211>20
 <212>DNA
 <400>2993
 gatatccagg gtagcgcttt 20
 <210>2994
 <211>20
 <212>DNA
 <400>2994
 gattccctgt gtctttgtgc 20
 <210>2995
 <211>20
 <212>DNA
 <400>2995
 ttcgctcccc cagcacctac 20
 <210>2996

<211>20
 <212>DNA
 <400>2996
 gctaatagaga ctgtcttttg 20
 <210>2997
 <211>20
 <212>DNA
 <400>2997
 ccctctgatc caaaacttcg 20
 <210>2998
 <211>20
 <212>DNA
 <400>2998
 gaacatctcc taagctgctg 20
 <210>2999
 <211>20
 <212>DNA
 <400>2999
 gaatgaacac cctcagcact 20
 <210>3000
 <211>20
 <212>DNA
 <400>3000
 gacatctcca agagttctgc 20
 <210>3001
 <211>20
 <212>DNA
 <400>3001
 gttgttggtg gttcatgggt 20
 <210>3002
 <211>20
 <212>DNA
 <400>3002
 gtttccgcac tcttatttgc 20
 <210>3003
 <211>20
 <212>DNA
 <400>3003
 caaaggcctt accaaagcac 20
 <210>3004
 <211>20
 <212>DNA
 <400>3004
 gcgtttctac aaaaccccg 20
 <210>3005
 <211>20
 <212>DNA
 <400>3005
 ggactactgg gttatcttgc 20
 <210>3006
 <211>20
 <212>DNA
 <400>3006
 ctctcatgat cttctcgctg 20
 <210>3007
 <211>20
 <212>DNA
 <400>3007
 gcttgggcga accaaaaactt 20
 <210>3008
 <211>20
 <212>DNA
 <400>3008
 cgatacctgt cagcagcttt 20

<210>3009
<211>20
<212>DNA
<400>3009
gcatcacgtg ttgtctttgc 20
<210>3010
<211>20
<212>DNA
<400>3010
cccgaagcaa tccagtagat 20
<210>3011
<211>20
<212>DNA
<400>3011
tgaagcaaag cgccgtttac 20
<210>3012
<211>20
<212>DNA
<400>3012
cgagccatgt atttcagtc 20
<210>3013
<211>20
<212>DNA
<400>3013
cgatacctgt cagcagcttt 20
<210>3014
<211>20
<212>DNA
<400>3014
ggatgttgtg gtgaagagtg 20
<210>3015
<211>20
<212>DNA
<400>3015
cttggagagg gctatatagg 20
<210>3016
<211>20
<212>DNA
<400>3016
caaaatgcgg gtcctttgag 20
<210>3017
<211>20
<212>DNA
<400>3017
gctcaagggtg cggagtaaaa 20
<210>3018
<211>20
<212>DNA
<400>3018
gattgtgggtg tgacatgcc 20
<210>3019
<211>20
<212>DNA
<400>3019
ggggcttgga caatctcatt 20
<210>3020
<211>20
<212>DNA
<400>3020
ccacgtctcc tcaagatttc 20
<210>3021
<211>20
<212>DNA
<400>3021

caagaaatcc cagtgcgagt 20
<210>3022
<211>20
<212>DNA
<400>3022
ctgatgtctt cgcaacccat 20
<210>3023
<211>20
<212>DNA
<400>3023
ccacgtctcc tcaagatttc 20
<210>3024
<211>20
<212>DNA
<400>3024
cettgtgctg cctttactgt 20
<210>3025
<211>20
<212>DNA
<400>3025
cctacctctc tgctttcttc 20
<210>3026
<211>20
<212>DNA
<400>3026
tcactcttct aaaggtctcg 20
<210>3027
<211>20
<212>DNA
<400>3027
tcagccggct tctttaccca 20
<210>3028
<211>20
<212>DNA
<400>3028
gagagacaaa ctccgattac 20
<210>3029
<211>20
<212>DNA
<400>3029
gtcgatctcc aagagtatct 20
<210>3030
<211>20
<212>DNA
<400>3030
tctaaagaag ccaccctctc 20
<210>3031
<211>20
<212>DNA
<400>3031
ccaccaactt cttcacctga 20
<210>3032
<211>20
<212>DNA
<400>3032
tcgggacgct tatctgcaaa 20
<210>3033
<211>20
<212>DNA
<400>3033
ccccatctaa tcctgttgtc 20
<210>3034
<211>20
<212>DNA

<400>3034
gaacgacggt atccacaatc 20
<210>3035
<211>20
<212>DNA
<400>3035
atcggcattcc caaggctccta 20
<210>3036
<211>20
<212>DNA
<400>3036
ccgtttcttct tgcgatgagt 20
<210>3037
<211>20
<212>DNA
<400>3037
ccaccaagta gtggtgtaac 20
<210>3038
<211>20
<212>DNA
<400>3038
gggttttttag aggtttgtgg 20
<210>3039
<211>20
<212>DNA
<400>3039
cgcagattgg ccttcttcta 20
<210>3040
<211>20
<212>DNA
<400>3040
ctgtgatctt ttggctttga 20
<210>3041
<211>20
<212>DNA
<400>3041
cacttgctgg tactgcacta 20
<210>3042
<211>20
<212>DNA
<400>3042
ctgacgtccg atgtatttgc 20
<210>3043
<211>20
<212>DNA
<400>3043
gccgatgaga attcctgtag 20
<210>3044
<211>20
<212>DNA
<400>3044
gattggcggt gctgaattcc 20
<210>3045
<211>20
<212>DNA
<400>3045
gggaagatgt ccgttcagtt 20
<210>3046
<211>20
<212>DNA
<400>3046
ctacagctaa agctgagtcc 20
<210>3047
<211>20

<212>DNA
 <400>3047
 ggagatgtct tcttcaccga 20
 <210>3048
 <211>20
 <212>DNA
 <400>3048
 caccagactc tacagtacca 20
 <210>3049
 <211>20
 <212>DNA
 <400>3049
 gaaccaacga cctaagtctc 20
 <210>3050
 <211>20
 <212>DNA
 <400>3050
 gcgaagataa actgagatcc 20
 <210>3051
 <211>20
 <212>DNA
 <400>3051
 gtgttcttga cctcgggttag 20
 <210>3052
 <211>20
 <212>DNA
 <400>3052
 agacgcagaa ggcattagca 20
 <210>3053
 <211>20
 <212>DNA
 <400>3053
 gagatcctca gtaacaaaca 20
 <210>3054
 <211>20
 <212>DNA
 <400>3054
 ttcaggagta tgcgtaccgt 20
 <210>3055
 <211>20
 <212>DNA
 <400>3055
 cgattcttct tagccggagt 20
 <210>3056
 <211>20
 <212>DNA
 <400>3056
 gggagtgaat acgatgaggt 20
 <210>3057
 <211>20
 <212>DNA
 <400>3057
 cagctgggtct tgagggtttac 20
 <210>3058
 <211>20
 <212>DNA
 <400>3058
 ggagcttcct aaagcatgtc 20
 <210>3059
 <211>20
 <212>DNA
 <400>3059
 cgggtctctgt atacgatacg 20
 <210>3060

<211>20
 <212>DNA
 <400>3060
 ctccagacaa gacaagaact 20
 <210>3061
 <211>20
 <212>DNA
 <400>3061
 ccccttcaag atctcatagg 20
 <210>3062
 <211>20
 <212>DNA
 <400>3062
 ggatggagga tcttcattcc 20
 <210>3063
 <211>20
 <212>DNA
 <400>3063
 caccagaaa cccttcagtt 20
 <210>3064
 <211>20
 <212>DNA
 <400>3064
 gccttcttga tggcaaacct 20
 <210>3065
 <211>20
 <212>DNA
 <400>3065
 cggggtattg tgcagaagat 20
 <210>3066
 <211>20
 <212>DNA
 <400>3066
 ccgacaagct ttcagatgct 20
 <210>3067
 <211>20
 <212>DNA
 <400>3067
 ctctaaggct agaaatcccc 20
 <210>3068
 <211>20
 <212>DNA
 <400>3068
 ctgcgcaatc tttggctact 20
 <210>3069
 <211>20
 <212>DNA
 <400>3069
 gagagggtag tgaaagttcc 20
 <210>3070
 <211>20
 <212>DNA
 <400>3070
 gcagtcgctg tgttttctca 20
 <210>3071
 <211>20
 <212>DNA
 <400>3071
 ccaagtttcg tatgtggttg 20
 <210>3072
 <211>20
 <212>DNA
 <400>3072
 ggtcgtgctt tgaagatgac 20

```

<210>3073
<211>20
<212>DNA
<400>3073
cgtcgatttt gcactcaagg      20
<210>3074
<211>20
<212>DNA
<400>3074
cctgatgctg ttttgcaagg      20
<210>3075
<211>20
<212>DNA
<400>3075
cgagtgcata atgttgctgc      20
<210>3076
<211>20
<212>DNA
<400>3076
ggggtggaag gtttttagatg      20
<210>3077
<211>20
<212>DNA
<400>3077
cgttggtctg aaggaaagtt      20
<210>3078
<211>20
<212>DNA
<400>3078
gagctagggt acatttctgg      20
<210>3079
<211>20
<212>DNA
<400>3079
cggagccttg ttcttgtaag      20
<210>3080
<211>20
<212>DNA
<400>3080
ccataaatgg gactcatggc      20
<210>3081
<211>20
<212>DNA
<400>3081
gcactagaat acaaggacct      20
<210>3082
<211>20
<212>DNA
<400>3082
cgtaattgct tgcaagaggc      20
<210>3083
<211>20
<212>DNA
<400>3083
cgaggggata agaacaggat      20
<210>3084
<211>20
<212>DNA
<400>3084
gcctatatct ttgcttcttg      20
<210>3085
<211>20
<212>DNA
<400>3085

```

cagacgagct ggtgatttga 20
<210>3086
<211>20
<212>DNA
<400>3086
cctaccgttg catgtccgca 20
<210>3087
<211>20
<212>DNA
<400>3087
ctaggacggg aagtatactc 20
<210>3088
<211>20
<212>DNA
<400>3088
ctaatttccg cggctaaggt 20
<210>3089
<211>20
<212>DNA
<400>3089
ggaagcacag tttgtgggaa 20
<210>3090
<211>20
<212>DNA
<400>3090
ggtctatatg aaggctagca 20
<210>3091
<211>20
<212>DNA
<400>3091
ctgtaggacg taaccgttga 20
<210>3092
<211>20
<212>DNA
<400>3092
cgattgtgca tggcgcagag 20
<210>3093
<211>20
<212>DNA
<400>3093
cgggctttct cttcagagtt 20
<210>3094
<211>20
<212>DNA
<400>3094
ggtccaggag tctgattcaa 20
<210>3095
<211>20
<212>DNA
<400>3095
ctaggacacg aaacgtggaa 20
<210>3096
<211>20
<212>DNA
<400>3096
ggcgcgatgc cttggttaat 20
<210>3097
<211>20
<212>DNA
<400>3097
aactcagtaa gtggcgattg 20
<210>3098
<211>20
<212>DNA

<400>3098
ggagctgttt acagatgcca 20
<210>3099
<211>20
<212>DNA
<400>3099
gtatccaagg cttgttggca 20
<210>3100
<211>20
<212>DNA
<400>3100
gaagctccca tgaatgaagg 20
<210>3101
<211>20
<212>DNA
<400>3101
ctgcgaagta gagcgtcttc 20
<210>3102
<211>20
<212>DNA
<400>3102
ggggaagttt atagtcagga 20
<210>3103
<211>20
<212>DNA
<400>3103
gcttttccgc gtcactttga 20
<210>3104
<211>20
<212>DNA
<400>3104
agcatatcgc acaaagagcg 20
<210>3105
<211>20
<212>DNA
<400>3105
gcctttgctc tgtgagaaac 20
<210>3106
<211>20
<212>DNA
<400>3106
gcgttggtga ttgaggactc 20
<210>3107
<211>20
<212>DNA
<400>3107
cacgtcgatc ttccatatgc 20
<210>3108
<211>20
<212>DNA
<400>3108
ctttcagagg agttttcctg 20
<210>3109
<211>20
<212>DNA
<400>3109
ggagatggtc taccagcaat 20
<210>3110
<211>20
<212>DNA
<400>3110
ggactgctga catctccaag 20
<210>3111
<211>20

```

<212>DNA
<400>3111
gcgacaagtc gttttggaag      20
<210>3112
<211>20
<212>DNA
<400>3112
ggtttctcggg tttgctgctg     20
<210>3113
<211>20
<212>DNA
<400>3113
tgcgatcccc tcattgtaac      20
<210>3114
<211>20
<212>DNA
<400>3114
ctgcaacttg gcttgacttg      20
<210>3115
<211>20
<212>DNA
<400>3115
cctacggaat tgcacgcatt      20
<210>3116
<211>20
<212>DNA
<400>3116
gcgagctgag gtatttctgt      20
<210>3117
<211>20
<212>DNA
<400>3117
ctgggttttgc tgctgtccat     20
<210>3118
<211>20
<212>DNA
<400>3118
attgggctgt agatggccag      20
<210>3119
<211>20
<212>DNA
<400>3119
cgcaagggttc tcttcacctt     20
<210>3120
<211>20
<212>DNA
<400>3120
tttgtggctg cgtagtacag      20
<210>3121
<211>20
<212>DNA
<400>3121
ctggcaatgc aagtaaagcc      20
<210>3122
<211>20
<212>DNA
<400>3122
ccaggagcaa gagctataga      20
<210>3123
<211>20
<212>DNA
<400>3123
cctgaagtta gtgagaacgg      20
<210>3124

```

<211>20
<212>DNA
<400>3124
gatcggatgc tcgttcaaag 20
<210>3125
<211>20
<212>DNA
<400>3125
acggccgtct ttgttcgata 20
<210>3126
<211>20
<212>DNA
<400>3126
gtccaagtac acacagaaag 20
<210>3127
<211>20
<212>DNA
<400>3127
ctagcgatgc gaagcaaaag 20
<210>3128
<211>20
<212>DNA
<400>3128
gagagaagtg taccatggaa 20
<210>3129
<211>20
<212>DNA
<400>3129
gggatagagc gttaggattc 20
<210>3130
<211>20
<212>DNA
<400>3130
gcagcatatg ctgccctttt 20
<210>3131
<211>20
<212>DNA
<400>3131
gaggaagagg gcactacatt 20
<210>3132
<211>20
<212>DNA
<400>3132
ccgttgccaa tgtaaaaggg 20
<210>3133
<211>20
<212>DNA
<400>3133
gcaaaccctag gagggaagtt 20
<210>3134
<211>20
<212>DNA
<400>3134
gtgatgcctt gggatcacta 20
<210>3135
<211>20
<212>DNA
<400>3135
cacaagcatt cgtaggtgga 20
<210>3136
<211>20
<212>DNA
<400>3136
gcgattacta agggagctct 20

<210>3137
<211>20
<212>DNA
<400>3137
gtcggagagg aactcctatt 20
<210>3138
<211>20
<212>DNA
<400>3138
gcaatttccc aagcgcgtta 20
<210>3139
<211>20
<212>DNA
<400>3139
ggacgtgctt gcggcattat 20
<210>3140
<211>20
<212>DNA
<400>3140
ccgtagtacg gtaggcttta 20
<210>3141
<211>20
<212>DNA
<400>3141
gagagtggga tccttcttct 20
<210>3142
<211>20
<212>DNA
<400>3142
gcagaaggag atgcatagga 20
<210>3143
<211>20
<212>DNA
<400>3143
tcgatttccc cattgtcagc 20
<210>3144
<211>20
<212>DNA
<400>3144
ggaacgtctt tcctctagtg 20
<210>3145
<211>20
<212>DNA
<400>3145
cctgtggacg gcatcagcag 20
<210>3146
<211>20
<212>DNA
<400>3146
ccgtagaaac ggcaaatacag 20
<210>3147
<211>20
<212>DNA
<400>3147
caccacctac agtaatggca 20
<210>3148
<211>20
<212>DNA
<400>3148
gggtctatgg agagcacgat 20
<210>3149
<211>20
<212>DNA
<400>3149

ggctccctaa gagaatgcaa 20
<210>3150
<211>20
<212>DNA
<400>3150
gcagttggca cgcatttatg 20
<210>3151
<211>20
<212>DNA
<400>3151
gatcccttgg agttcttgag 20
<210>3152
<211>20
<212>DNA
<400>3152
agggcatttg cggaaatgcg 20
<210>3153
<211>20
<212>DNA
<400>3153
cggagggaat caagtgagtc 20
<210>3154
<211>20
<212>DNA
<400>3154
ccttaacagg cacactaagc 20
<210>3155
<211>20
<212>DNA
<400>3155
gtttaagcag atccgaaacc 20
<210>3156
<211>20
<212>DNA
<400>3156
cgttgggtgg tcagatacta 20
<210>3157
<211>20
<212>DNA
<400>3157
gggactttag gaggaactac 20
<210>3158
<211>20
<212>DNA
<400>3158
aagaagctcg agtggttcgac 20
<210>3159
<211>20
<212>DNA
<400>3159
ccgttcccaa gttcatggaa 20
<210>3160
<211>20
<212>DNA
<400>3160
acagatggtg aataccgtgc 20
<210>3161
<211>20
<212>DNA
<400>3161
ggcagtagaa ttgtaggagc 20
<210>3162
<211>20
<212>DNA

<400>3162
 gctgccatat tttcctctcg 20
 <210>3163
 <211>20
 <212>DNA
 <400>3163
 gatccgaggc cttggtatatt 20
 <210>3164
 <211>20
 <212>DNA
 <400>3164
 ggaccatcca taagctactc 20
 <210>3165
 <211>20
 <212>DNA
 <400>3165
 ggttatgaag gtggcaatgc 20
 <210>3166
 <211>20
 <212>DNA
 <400>3166
 tggatatcgg caatgacagc 20
 <210>3167
 <211>20
 <212>DNA
 <400>3167
 tcgacaatcc ccgcgattat 20
 <210>3168
 <211>20
 <212>DNA
 <400>3168
 gtttctgaga cagccgcaaa 20
 <210>3169
 <211>20
 <212>DNA
 <400>3169
 cagccatttg cgcaacttga 20
 <210>3170
 <211>20
 <212>DNA
 <400>3170
 gctgagcagc tagcgttttg 20
 <210>3171
 <211>20
 <212>DNA
 <400>3171
 ctgatacctgc tctgcttctt 20
 <210>3172
 <211>20
 <212>DNA
 <400>3172
 cctacactta gccaatcagc 20
 <210>3173
 <211>20
 <212>DNA
 <400>3173
 gaggggaaac ggaatccata 20
 <210>3174
 <211>20
 <212>DNA
 <400>3174
 ctgaggagca agttcttctg 20
 <210>3175
 <211>20

<212>DNA
<400>3175
ctgtcaggat attcctaggg 20
<210>3176
<211>20
<212>DNA
<400>3176
gctgggtaag atcaggttct 20
<210>3177
<211>20
<212>DNA
<400>3177
ccttgacgat agcgtgcttt 20
<210>3178
<211>20
<212>DNA
<400>3178
gcaccaagat gaagggttgt 20
<210>3179
<211>20
<212>DNA
<400>3179
gcaggatttc tgcacatcag 20
<210>3180
<211>20
<212>DNA
<400>3180
acacaacagc aaggctgtca 20
<210>3181
<211>20
<212>DNA
<400>3181
cgtccgctat tgaagtgtt 20
<210>3182
<211>20
<212>DNA
<400>3182
gctcacgaat caactctgtc 20
<210>3183
<211>20
<212>DNA
<400>3183
ggcagattct gtaagccaac 20
<210>3184
<211>20
<212>DNA
<400>3184
ctgctgtagt accttcgagt 20
<210>3185
<211>20
<212>DNA
<400>3185
gctgtttaca gcgatgggtct 20
<210>3186
<211>20
<212>DNA
<400>3186
gctacaacct gtacgccaaa 20
<210>3187
<211>20
<212>DNA
<400>3187
catcgtcgat ttgcagtgtg 20
<210>3188

```

<211>20
<212>DNA
<400>3188
gtttgtgttt gagagtccgc      20
<210>3189
<211>20
<212>DNA
<400>3189
ggtcccgttt ttttgcttcc     20
<210>3190
<211>20
<212>DNA
<400>3190
gctaccgaag ttgaggattt     20
<210>3191
<211>20
<212>DNA
<400>3191
cgaggcgggtt ttgttggtat    20
<210>3192
<211>20
<212>DNA
<400>3192
agcaccagca atagtggcat     20
<210>3193
<211>20
<212>DNA
<400>3193
agctgatgct tgatgggttcg    20
<210>3194
<211>20
<212>DNA
<400>3194
gagccgcgat gatgctatta     20
<210>3195
<211>20
<212>DNA
<400>3195
gctaccgaag ttgaggattt     20
<210>3196
<211>20
<212>DNA
<400>3196
gggcttgctc atcgatctaa     20
<210>3197
<211>20
<212>DNA
<400>3197
agaaaccgcg atcatcacag     20
<210>3198
<211>20
<212>DNA
<400>3198
tgctattggc agcaaggggc     20
<210>3199
<211>20
<212>DNA
<400>3199
cttccgtagg tacgggatgg     20
<210>3200
<211>20
<212>DNA
<400>3200
ggaagtcagg tgaaactgga     20

```

<210>3201
<211>20
<212>DNA
<400>3201
ccacacgtca aggacagaaa 20
<210>3202
<211>20
<212>DNA
<400>3202
ggaaagctta ggggggattc 20
<210>3203
<211>20
<212>DNA
<400>3203
gcgatgtgca agaagaagag 20
<210>3204
<211>20
<212>DNA
<400>3204
ggaaaggtaa caggacctct 20
<210>3205
<211>20
<212>DNA
<400>3205
gccttttagag tgcttcacag 20
<210>3206
<211>20
<212>DNA
<400>3206
catcagacag tctcacggag 20
<210>3207
<211>20
<212>DNA
<400>3207
ggagcagacg attatgaggg 20
<210>3208
<211>20
<212>DNA
<400>3208
gctccatacg aatgacgcta 20
<210>3209
<211>20
<212>DNA
<400>3209
ccgtatcgag gtgctgttat 20
<210>3210
<211>20
<212>DNA
<400>3210
gcgtgcattg tttcgttccg 20
<210>3211
<211>20
<212>DNA
<400>3211
gcgagtcctt ctgtagttac 20
<210>3212
<211>20
<212>DNA
<400>3212
aatcgaaggc ctcgacttgg 20
<210>3213
<211>20
<212>DNA
<400>3213

agaatccgct accgcataga 20
<210>3214
<211>20
<212>DNA
<400>3214
cgaggcagta tccataaagg 20
<210>3215
<211>20
<212>DNA
<400>3215
cgatatcctt atggtcggag 20
<210>3216
<211>20
<212>DNA
<400>3216
ccacaggtct tttgaggaag 20
<210>3217
<211>20
<212>DNA
<400>3217
gcgtgcattg tttcgttccg 20
<210>3218
<211>20
<212>DNA
<400>3218
cggtacgagc ttctctccat 20
<210>3219
<211>20
<212>DNA
<400>3219
ctcgaagggt gtctgcaaaa 20
<210>3220
<211>20
<212>DNA
<400>3220
cgcaccgact tccgcctgga 20
<210>3221
<211>20
<212>DNA
<400>3221
cttggtgtaa agagggtagg 20
<210>3222
<211>20
<212>DNA
<400>3222
tcgatgtcgc tgcccttcaa 20
<210>3223
<211>20
<212>DNA
<400>3223
ggggtctcga cgtaaaactta 20
<210>3224
<211>20
<212>DNA
<400>3224
gccctccttt cctcaacttt 20
<210>3225
<211>20
<212>DNA
<400>3225
cgaggagcct ggatcattat 20
<210>3226
<211>20
<212>DNA

<400>3226
ccgccaagac ttttggaaag 20
<210>3227
<211>20
<212>DNA
<400>3227
caaactctca gtcgctactg 20
<210>3228
<211>20
<212>DNA
<400>3228
ccctccagag atcattaagg 20
<210>3229
<211>20
<212>DNA
<400>3229
cgatacgatt tgctcccctt 20
<210>3230
<211>20
<212>DNA
<400>3230
tgatcataag cccttggagc 20
<210>3231
<211>20
<212>DNA
<400>3231
cctccaaaga atcgctctca 20
<210>3232
<211>20
<212>DNA
<400>3232
tcatcagcat tcagtggggg 20
<210>3233
<211>20
<212>DNA
<400>3233
gagcctaggg gattagagta 20
<210>3234
<211>20
<212>DNA
<400>3234
cgtggatgat gaagtctcag 20
<210>3235
<211>20
<212>DNA
<400>3235
gagacagagc tggcacatct 20
<210>3236
<211>20
<212>DNA
<400>3236
cagctctttg gcatcaagga 20
<210>3237
<211>20
<212>DNA
<400>3237
gccggaggat gttgaaagat 20
<210>3238
<211>20
<212>DNA
<400>3238
ctctggcaac cacgctaata 20
<210>3239
<211>20

<212>DNA
 <400>3239
 ccgtggggaa catcacataa 20
 <210>3240
 <211>20
 <212>DNA
 <400>3240
 cttggcttcc aaggcattct 20
 <210>3241
 <211>20
 <212>DNA
 <400>3241
 cgagggacag gagttttcat 20
 <210>3242
 <211>20
 <212>DNA
 <400>3242
 aagctctcta cctttgttgc 20
 <210>3243
 <211>20
 <212>DNA
 <400>3243
 gcttatgaac gaactgtcgt 20
 <210>3244
 <211>20
 <212>DNA
 <400>3244
 ccttgcagca tgacattcac 20
 <210>3245
 <211>20
 <212>DNA
 <400>3245
 cgggatgagg agattcaaca 20
 <210>3246
 <211>20
 <212>DNA
 <400>3246
 ggccggcttt ggatagttat 20
 <210>3247
 <211>20
 <212>DNA
 <400>3247
 gagttagggg taggacgtta 20
 <210>3248
 <211>20
 <212>DNA
 <400>3248
 cgagagcaag gtaggtggca 20
 <210>3249
 <211>20
 <212>DNA
 <400>3249
 gcgggggtatc tacgtgttcg 20
 <210>3250
 <211>20
 <212>DNA
 <400>3250
 cgagcttttt agggaggact 20
 <210>3251
 <211>20
 <212>DNA
 <400>3251
 gaagatcgca aggatgacag 20
 <210>3252

<211>20
<212>DNA
<400>3252
gcaaacgttc cctcggtaaa 20
<210>3253
<211>20
<212>DNA
<400>3253
cgctgacaaa gcaatgcgct 20
<210>3254
<211>20
<212>DNA
<400>3254
cctgagtgga catgggttaca 20
<210>3255
<211>20
<212>DNA
<400>3255
cctatgacat aagctccgag 20
<210>3256
<211>20
<212>DNA
<400>3256
ggatgcgctc ttcaagtgtgta 20
<210>3257
<211>20
<212>DNA
<400>3257
gaccaatagc caccaagaca 20
<210>3258
<211>20
<212>DNA
<400>3258
cgtctatccg acagaggatt 20
<210>3259
<211>20
<212>DNA
<400>3259
gaagaggacc ctgtgcttat 20
<210>3260
<211>20
<212>DNA
<400>3260
gcaacgtatt ctacagaacc 20
<210>3261
<211>20
<212>DNA
<400>3261
gagcgtcaga gggaagataa 20
<210>3262
<211>20
<212>DNA
<400>3262
caggacaact gcaagaagca 20
<210>3263
<211>20
<212>DNA
<400>3263
ggaggtaaac acgctgcttt 20
<210>3264
<211>20
<212>DNA
<400>3264
cagctccgaa gaacatagca 20

<210>3265
<211>20
<212>DNA
<400>3265
cgcgagttcc aacttaggaa 20
<210>3266
<211>20
<212>DNA
<400>3266
ctggtatagc ttccctggag 20
<210>3267
<211>20
<212>DNA
<400>3267
catcctgtcg aaagatggct 20
<210>3268
<211>20
<212>DNA
<400>3268
cagagagtcg tacaacagca 20
<210>3269
<211>20
<212>DNA
<400>3269
ggacaaaagg tagagttacg 20
<210>3270
<211>20
<212>DNA
<400>3270
cggcaacgct ctctatttag 20
<210>3271
<211>20
<212>DNA
<400>3271
gaggtttttc cagcctcttg 20
<210>3272
<211>20
<212>DNA
<400>3272
gacgttcgca gattttgcga 20
<210>3273
<211>20
<212>DNA
<400>3273
ggacgttacc ttgtgtatcc 20
<210>3274
<211>20
<212>DNA
<400>3274
ggtctccctg gtctgtattt 20
<210>3275
<211>20
<212>DNA
<400>3275
ctccatcaag ctatcgaagc 20
<210>3276
<211>20
<212>DNA
<400>3276
gagttgtccc ctcttgagaa 20
<210>3277
<211>20
<212>DNA
<400>3277

gggtccattc tgaccaaact 20
<210>3278
<211>20
<212>DNA
<400>3278
caatactgat gacgtctggg 20
<210>3279
<211>20
<212>DNA
<400>3279
gctcttcatt gagaagaccg 20
<210>3280
<211>20
<212>DNA
<400>3280
gtaggttctg taaggatggc 20
<210>3281
<211>20
<212>DNA
<400>3281
cagcttcctt agcgccgggtg 20
<210>3282
<211>20
<212>DNA
<400>3282
aggggtaagc accctgagat 20
<210>3283
<211>20
<212>DNA
<400>3283
tactgttgcg gcttcctcac 20
<210>3284
<211>20
<212>DNA
<400>3284
ctttcgcaga agttaccacc 20
<210>3285
<211>20
<212>DNA
<400>3285
ctaatgccgg ggcttcttta 20
<210>3286
<211>20
<212>DNA
<400>3286
ccacggcccg taccctcgac 20
<210>3287
<211>20
<212>DNA
<400>3287
gcctgatatc ctgcattacg 20
<210>3288
<211>20
<212>DNA
<400>3288
ccaacagttc tgctttgcga 20
<210>3289
<211>20
<212>DNA
<400>3289
ccagtttttg cttgcttggc 20
<210>3290
<211>20
<212>DNA

<400>3290
cgagacttcg attacagcgt 20
<210>3291
<211>20
<212>DNA
<400>3291
gcgacatcgt aatcagcagc 20
<210>3292
<211>20
<212>DNA
<400>3292
aaaagcgggt gatgaggctt 20
<210>3293
<211>20
<212>DNA
<400>3293
catcatcacgg ctatggggaa 20
<210>3294
<211>20
<212>DNA
<400>3294
ggccataaga ctgtggtctt 20
<210>3295
<211>20
<212>DNA
<400>3295
cgttccttta gtcgtttgcg 20
<210>3296
<211>20
<212>DNA
<400>3296
ctgctgtaga gaatcaagcg 20
<210>3297
<211>20
<212>DNA
<400>3297
agcagcatct ttggctttgc 20
<210>3298
<211>20
<212>DNA
<400>3298
ggggcgcttt aattaaggga 20
<210>3299
<211>20
<212>DNA
<400>3299
ctcggaatgc aaaatcgggtg 20
<210>3300
<211>20
<212>DNA
<400>3300
agggacttcg gggaagtttt 20
<210>3301
<211>20
<212>DNA
<400>3301
ggttccacca agaacagact 20
<210>3302
<211>20
<212>DNA
<400>3302
ggcttgaatc ttgacctaca 20
<210>3303
<211>20

```

<212>DNA
<400>3303
ggctgaacct attcagcaga      20
<210>3304
<211>20
<212>DNA
<400>3304
gggcaaaatg gaattacccc      20
<210>3305
<211>20
<212>DNA
<400>3305
cgcccaagtt caaacctcaa      20
<210>3306
<211>20
<212>DNA
<400>3306
cttgtcgatg gtaagggtgga      20
<210>3307
<211>20
<212>DNA
<400>3307
caaactatag aggatgctgc      20
<210>3308
<211>20
<212>DNA
<400>3308
gggagaagat acaatcccga      20
<210>3309
<211>20
<212>DNA
<400>3309
gggtacggaa cttgccatta      20
<210>3310
<211>20
<212>DNA
<400>3310
ggaggtcact ccttctacaa      20
<210>3311
<211>20
<212>DNA
<400>3311
ccaacggcct tctacactat      20
<210>3312
<211>20
<212>DNA
<400>3312
gaggcaaatg acgttatcgg      20
<210>3313
<211>20
<212>DNA
<400>3313
acctgcaagg ccatttagag      20
<210>3314
<211>20
<212>DNA
<400>3314
agagtgtaac ggagataggg      20
<210>3315
<211>20
<212>DNA
<400>3315
gaagaggttg acctgcaagt      20
<210>3316

```

<211>20
 <212>DNA
 <400>3316
 cgaagagatt cgctctgttg 20
 <210>3317
 <211>20
 <212>DNA
 <400>3317
 gcatgatttc actgaggagg 20
 <210>3318
 <211>20
 <212>DNA
 <400>3318
 gtgtaacgga gatagggaca 20
 <210>3319
 <211>20
 <212>DNA
 <400>3319
 gaagagggtg acctgcaagt 20
 <210>3320
 <211>20
 <212>DNA
 <400>3320
 ggtcgggttt tagctgttgt 20
 <210>3321
 <211>20
 <212>DNA
 <400>3321
 ctggagttgt tggatgatgga 20
 <210>3322
 <211>20
 <212>DNA
 <400>3322
 ccctaagttg tcagataggg 20
 <210>3323
 <211>20
 <212>DNA
 <400>3323
 ccatcgggat aaagagtcca 20
 <210>3324
 <211>20
 <212>DNA
 <400>3324
 ctatggcatt gttgccatcg 20
 <210>3325
 <211>20
 <212>DNA
 <400>3325
 ggaaggactt ctgttccaag 20
 <210>3326
 <211>20
 <212>DNA
 <400>3326
 gggattagat aagggtgacc 20
 <210>3327
 <211>20
 <212>DNA
 <400>3327
 ggagattgtg gtgttggtcac 20
 <210>3328
 <211>20
 <212>DNA
 <400>3328
 gattttctac aagggtgccc 20

<210>3329
<211>20
<212>DNA
<400>3329
ctatggcatt gttgccatcg 20
<210>3330
<211>20
<212>DNA
<400>3330
ggaatgtcta cccatccaga 20
<210>3331
<211>20
<212>DNA
<400>3331
tgacgcagtt gcccacagc 20
<210>3332
<211>20
<212>DNA
<400>3332
tcgtcgtgag tgaagggaaa 20
<210>3333
<211>20
<212>DNA
<400>3333
gagttagagg agctcttcct 20
<210>3334
<211>20
<212>DNA
<400>3334
cctgcaatag atagagccct 20
<210>3335
<211>20
<212>DNA
<400>3335
ttccgagtc ttgatggcga 20
<210>3336
<211>20
<212>DNA
<400>3336
caggacatcg ttaggccatt 20
<210>3337
<211>20
<212>DNA
<400>3337
ctgtagatcc tcgacatctc 20
<210>3338
<211>20
<212>DNA
<400>3338
gctacgagat catcccaaca 20
<210>3339
<211>20
<212>DNA
<400>3339
cccgtcaga aggaggaata 20
<210>3340
<211>20
<212>DNA
<400>3340
tggtgcagtc gccactgatg 20
<210>3341
<211>20
<212>DNA
<400>3341

aaagcgtcat gcgttgctcg 20
<210>3342
<211>20
<212>DNA
<400>3342
gataccgatc tgcaggaagc 20
<210>3343
<211>20
<212>DNA
<400>3343
gtgttcgtgg agggaaatttc 20
<210>3344
<211>20
<212>DNA
<400>3344
caggagtgcc agcaagaaaa 20
<210>3345
<211>20
<212>DNA
<400>3345
catgatgtgc gggctgctac 20
<210>3346
<211>20
<212>DNA
<400>3346
agcgcacgat tcgtaggaat 20
<210>3347
<211>20
<212>DNA
<400>3347
tctacccgac ctacaaaagc 20
<210>3348
<211>20
<212>DNA
<400>3348
tctacccctt gcgttttagc 20
<210>3349
<211>20
<212>DNA
<400>3349
gaacacgtag cgacctgtta 20
<210>3350
<211>20
<212>DNA
<400>3350
cctatgattc ttggggacca 20
<210>3351
<211>20
<212>DNA
<400>3351
caacttgagc tctgtcagca 20
<210>3352
<211>20
<212>DNA
<400>3352
ggaatatggc ataggagcac 20
<210>3353
<211>20
<212>DNA
<400>3353
caaggaatcg ccatgctacg 20
<210>3354
<211>20
<212>DNA

```

<400>3354
gcaggtattg gtgctctctc 20
<210>3355
<211>20
<212>DNA
<400>3355
gagtggatct tcacaaggct 20
<210>3356
<211>20
<212>DNA
<400>3356
cctctttctct atcacgttgc 20
<210>3357
<211>20
<212>DNA
<400>3357
ccatgctgta acaatcgggt 20
<210>3358
<211>20
<212>DNA
<400>3358
ttgccgcatt tgcctccacc 20
<210>3359
<211>20
<212>DNA
<400>3359
ctgggaagac cacgaaatgt 20
<210>3360
<211>20
<212>DNA
<400>3360
cgcaacagga gagacaatgt 20
<210>3361
<211>20
<212>DNA
<400>3361
gagaggttcc ctcaaaacct 20
<210>3362
<211>20
<212>DNA
<400>3362
ccaggaagac gagcaaattct 20
<210>3363
<211>20
<212>DNA
<400>3363
ccatattttg cgggttaact 20
<210>3364
<211>20
<212>DNA
<400>3364
gaaatcttcg ctgtgcaagg 20
<210>3365
<211>20
<212>DNA
<400>3365
ggccgtgatt ggatttggaa 20
<210>3366
<211>20
<212>DNA
<400>3366
ggagctggag gacataatag 20
<210>3367
<211>20

```


WO 99/27105

```

<212>DNA
<400>3367
gctggctcct atttaggttc      20
<210>3368
<211>20
<212>DNA
<400>3368
caatgggagt gttatacgcc      20
<210>3369
<211>20
<212>DNA
<400>3369
tcattcctct aggggggtgtt     20
<210>3370
<211>20
<212>DNA
<400>3370
ggagtcgaag atagcgcaat      20
<210>3371
<211>20
<212>DNA
<400>3371
ggatctacag catcatgagg      20
<210>3372
<211>20
<212>DNA
<400>3372
tggcgcaagg ctttcaagaa      20
<210>3373
<211>20
<212>DNA
<400>3373
gctgatgact gggatgaagt      20
<210>3374
<211>20
<212>DNA
<400>3374
agagtaagtc gttgccaagc      20
<210>3375
<211>20
<212>DNA
<400>3375
taccgaaagg agtgctggag      20
<210>3376
<211>20
<212>DNA
<400>3376
gcgtgggata tatcaacgga      20
<210>3377
<211>20
<212>DNA
<400>3377
ctttcggttaa ggaactcggc      20
<210>3378
<211>20
<212>DNA
<400>3378
ctagcctcct cagcaatttc      20
<210>3379
<211>20
<212>DNA
<400>3379
ggaactgata gtgtggcgca      20
<210>3380

```

<211>20
<212>DNA
<400>3380
agacctcgaa gagatccctc 20
<210>3381
<211>20
<212>DNA
<400>3381
gtatatggtg tgacgcctgc 20
<210>3382
<211>20
<212>DNA
<400>3382
atctcaccat cttgtcgggtg 20
<210>3383
<211>20
<212>DNA
<400>3383
ccgaactcag aagttaagcc 20
<210>3384
<211>20
<212>DNA
<400>3384
cacctgcaag aatcacgcca 20
<210>3385
<211>20
<212>DNA
<400>3385
gcttcttcgg aatcaatggg 20
<210>3386
<211>20
<212>DNA
<400>3386
gttcgggacg ccataagata 20
<210>3387
<211>20
<212>DNA
<400>3387
ggattcgtag ggctaatac 20
<210>3388
<211>20
<212>DNA
<400>3388
gacaacaatt cacaaggacc 20
<210>3389
<211>20
<212>DNA
<400>3389
cacctgcaag aatcacgcca 20
<210>3390
<211>20
<212>DNA
<400>3390
tggtgaatac ataggcatat 20
<210>3391
<211>20
<212>DNA
<400>3391
gcgcactctt gaaactgtgt 20
<210>3392
<211>20
<212>DNA
<400>3392
ggcaactttt ctcaggcagt 20

<210>3393
 <211>20
 <212>DNA
 <400>3393
 gggattgtga ctatggagtg 20
 <210>3394
 <211>20
 <212>DNA
 <400>3394
 cctcgggtgtg taaatcacag 20
 <210>3395
 <211>20
 <212>DNA
 <400>3395
 gaattggcaa aagagctggg 20
 <210>3396
 <211>20
 <212>DNA
 <400>3396
 ggggtgaggaa tccttttaggt 20
 <210>3397
 <211>20
 <212>DNA
 <400>3397
 gcctctgtgc caaggtctct 20
 <210>3398
 <211>20
 <212>DNA
 <400>3398
 cctatggtct caacgacaag 20
 <210>3399
 <211>20
 <212>DNA
 <400>3399
 ggtgtgggta cacaagcttc 20
 <210>3400
 <211>20
 <212>DNA
 <400>3400
 ggtcacagca aaaccatcca 20
 <210>3401
 <211>20
 <212>DNA
 <400>3401
 acgtgcacat cagcttatgg 20
 <210>3402
 <211>20
 <212>DNA
 <400>3402
 cccacagcat ctatgttcac 20
 <210>3403
 <211>20
 <212>DNA
 <400>3403
 ggagtcgcag atactgtaag 20
 <210>3404
 <211>20
 <212>DNA
 <400>3404
 cgtcagagac tcgagatagt 20
 <210>3405
 <211>20
 <212>DNA
 <400>3405

gccagcatct cgcgaaatta 20
<210>3406
<211>20
<212>DNA
<400>3406
gcatctgcta atgaggggaac 20
<210>3407
<211>20
<212>DNA
<400>3407
cccacagcat ctatgttcac 20
<210>3408
<211>20
<212>DNA
<400>3408
gctgcaccac tatcatcggg 20
<210>3409
<211>20
<212>DNA
<400>3409
tttgctgcaa ggaatgccgt 20
<210>3410
<211>20
<212>DNA
<400>3410
ggtggcgggtt agcatagaat 20
<210>3411
<211>20
<212>DNA
<400>3411
cacgaaccac atcgctatac 20
<210>3412
<211>20
<212>DNA
<400>3412
cccttggttg gagctttttg 20
<210>3413
<211>20
<212>DNA
<400>3413
ccttgccatt ataggagagt 20
<210>3414
<211>20
<212>DNA
<400>3414
gacacacgct ctcctttgta 20
<210>3415
<211>20
<212>DNA
<400>3415
ggctggatga agttcgtggt 20
<210>3416
<211>20
<212>DNA
<400>3416
gttgctgtag agcctcctat 20
<210>3417
<211>20
<212>DNA
<400>3417
cgacaagcat tgccccacact 20
<210>3418
<211>20
<212>DNA

<400>3418
acagtgcgta atatggaagc 20
<210>3419
<211>20
<212>DNA
<400>3419
cgtgtctcta tagaagcagg 20
<210>3420
<211>20
<212>DNA
<400>3420
gggattgaca gggagaacat 20
<210>3421
<211>20
<212>DNA
<400>3421
gacacacgct ctcccttgta 20
<210>3422
<211>20
<212>DNA
<400>3422
gcgagaagtg cgcataattc 20
<210>3423
<211>20
<212>DNA
<400>3423
gcataggacg tgggttactt 20
<210>3424
<211>20
<212>DNA
<400>3424
cagcttctcg aggagatatg 20
<210>3425
<211>20
<212>DNA
<400>3425
cctgaagctt ttctccctgc 20
<210>3426
<211>20
<212>DNA
<400>3426
cctgctaggg agctgcgctg 20
<210>3427
<211>20
<212>DNA
<400>3427
ccaaggagat agctttggtc 20
<210>3428
<211>20
<212>DNA
<400>3428
tcctgcctt agcttctgta 20
<210>3429
<211>20
<212>DNA
<400>3429
ctctgggtgt tcctgtaatg 20
<210>3430
<211>20
<212>DNA
<400>3430
gtctcaagat gtcagcaacg 20
<210>3431
<211>20

```

<212>DNA
<400>3431
gcgggatctg tcattctaca      20
<210>3432
<211>20
<212>DNA
<400>3432
gtgctttgtt tacggagggg      20
<210>3433
<211>20
<212>DNA
<400>3433
gctcttatgg ctgtagggaa      20
<210>3434
<211>20
<212>DNA
<400>3434
ggagcttatg gacatcagga      20
<210>3435
<211>20
<212>DNA
<400>3435
gatctaagca gtcccttagc      20
<210>3436
<211>20
<212>DNA
<400>3436
gacagcagct agcccatttt      20
<210>3437
<211>20
<212>DNA
<400>3437
gctcagaaag atccctccta      20
<210>3438
<211>20
<212>DNA
<400>3438
ctgctgcgac acgaatttct      20
<210>3439
<211>20
<212>DNA
<400>3439
cgggagttca tcgacgtcta      20
<210>3440
<211>20
<212>DNA
<400>3440
cctccgaagg gaaagatgta      20
<210>3441
<211>20
<212>DNA
<400>3441
gggaaatctt gcgaacacga      20
<210>3442
<211>20
<212>DNA
<400>3442
ggttcctaata gggagaagga      20
<210>3443
<211>20
<212>DNA
<400>3443
ctgtggtgct agtgggttta      20
<210>3444

```

```

<211>20
<212>DNA
<400>3444
cagtgcctag tgttcaagag      20
<210>3445
<211>20
<212>DNA
<400>3445
cgaacaggca ttcactaaag      20
<210>3446
<211>20
<212>DNA
<400>3446
gggaaaaccc ttcagcattc      20
<210>3447
<211>20
<212>DNA
<400>3447
cgctctcgat tacaggactt      20
<210>3448
<211>20
<212>DNA
<400>3448
ggctttctgt agaacgcaca      20
<210>3449
<211>20
<212>DNA
<400>3449
ccaggtctga acaggaatgt      20
<210>3450
<211>20
<212>DNA
<400>3450
gctgaggtct cttctcttct      20
<210>3451
<211>20
<212>DNA
<400>3451
gcccaaagct aaaatgcggt      20
<210>3452
<211>20
<212>DNA
<400>3452
gctcttgaag aattggatgc      20
<210>3453
<211>20
<212>DNA
<400>3453
ggctttctgt agaacgcaca      20
<210>3454
<211>20
<212>DNA
<400>3454
gtctgcagaa cagacgatct      20
<210>3455
<211>20
<212>DNA
<400>3455
ctcaaggctc agacttaagg      20
<210>3456
<211>20
<212>DNA
<400>3456
ggtagtgtga atgtgcatgt      20

```

<210>3457
<211>20
<212>DNA
<400>3457
gatctccgca aggaactgat 20
<210>3458
<211>20
<212>DNA
<400>3458
agctgctgga ggtggtgaag 20
<210>3459
<211>20
<212>DNA
<400>3459
ctcttctggt ccctgtgatg 20
<210>3460
<211>20
<212>DNA
<400>3460
cgttcgcaaa gaagtcacct 20
<210>3461
<211>20
<212>DNA
<400>3461
cgagtatcct aaagctgggt 20
<210>3462
<211>20
<212>DNA
<400>3462
ggactcataa ttatcctggg 20
<210>3463
<211>20
<212>DNA
<400>3463
caaatatggc cccagcactt 20
<210>3464
<211>20
<212>DNA
<400>3464
gggaattctt tatgggtcccg 20
<210>3465
<211>20
<212>DNA
<400>3465
gctgcagaga gagaattggt 20
<210>3466
<211>20
<212>DNA
<400>3466
aaccaaacgg tgctcgcttc 20
<210>3467
<211>20
<212>DNA
<400>3467
gctcaggcct aattgacttt 20
<210>3468
<211>20
<212>DNA
<400>3468
cgagaacagg gaaagaggaa 20
<210>3469
<211>20
<212>DNA
<400>3469

cgtgggaacg tgattcgtaa 20
 <210>3470
 <211>20
 <212>DNA
 <400>3470
 gggataaggt aaggctgtgt 20
 <210>3471
 <211>20
 <212>DNA
 <400>3471
 ggtaaagaga gtaagcgctc 20
 <210>3472
 <211>20
 <212>DNA
 <400>3472
 cgcacggaag caagtcttta 20
 <210>3473
 <211>20
 <212>DNA
 <400>3473
 caaaagcagt ccctctaacc 20
 <210>3474
 <211>20
 <212>DNA
 <400>3474
 cccaagagga gcaaagtagt 20
 <210>3475
 <211>20
 <212>DNA
 <400>3475
 gcattaaggc gtgatggagt 20
 <210>3476
 <211>20
 <212>DNA
 <400>3476
 ggagagatgc aagtgttgga 20
 <210>3477
 <211>20
 <212>DNA
 <400>3477
 ggtatgatat ccccgacgat 20
 <210>3478
 <211>20
 <212>DNA
 <400>3478
 cccgaactgg tcttcataga 20
 <210>3479
 <211>20
 <212>DNA
 <400>3479
 cgcttggtgc tcgaagatag 20
 <210>3480
 <211>20
 <212>DNA
 <400>3480
 cgctaaggga aggaacagaa 20
 <210>3481
 <211>20
 <212>DNA
 <400>3481
 gggacttcta cagctttctc 20
 <210>3482
 <211>20
 <212>DNA

<400>3482
cttggcgtgt gttgacgaaa 20
<210>3483
<211>20
<212>DNA
<400>3483
gttccatcac tgccatcagt 20
<210>3484
<211>20
<212>DNA
<400>3484
cactcggttc tgactttgta 20
<210>3485
<211>20
<212>DNA
<400>3485
ctgggtcttt gaaagaggga 20
<210>3486
<211>20
<212>DNA
<400>3486
gagtgatcaa caacagtgga 20
<210>3487
<211>20
<212>DNA
<400>3487
caacgcggtt tttcgaggaa 20
<210>3488
<211>20
<212>DNA
<400>3488
gaactcttgg agcaacagca 20
<210>3489
<211>20
<212>DNA
<400>3489
cgcatcctga atcttgcac 20
<210>3490
<211>20
<212>DNA
<400>3490
gagttgcgta cgataatggc 20
<210>3491
<211>20
<212>DNA
<400>3491
gtgaagctgc tatgagtagg 20
<210>3492
<211>20
<212>DNA
<400>3492
cttcggccta tcctaacaaa 20
<210>3493
<211>20
<212>DNA
<400>3493
cgcatattgta gagcgcttcg 20
<210>3494
<211>20
<212>DNA
<400>3494
gccgagaaca gagattctga 20
<210>3495
<211>20

```

<212>DNA
<400>3495
ttaggccctg acttagagtc      20
<210>3496
<211>20
<212>DNA
<400>3496
cgtagccctg atagagtttc      20
<210>3497
<211>20
<212>DNA
<400>3497
cctcagattg ggcgatttca      20
<210>3498
<211>20
<212>DNA
<400>3498
cgagagatga cagtctggta      20
<210>3499
<211>20
<212>DNA
<400>3499
gtagcgaagt tcaacgtttt      20
<210>3500
<211>20
<212>DNA
<400>3500
ccgaccttcg taaaatcgtg      20
<210>3501
<211>20
<212>DNA
<400>3501
gcagagcttc ctttgcttgt      20
<210>3502
<211>20
<212>DNA
<400>3502
cgctagagaa atagggcacg      20
<210>3503
<211>20
<212>DNA
<400>3503
ctttgaagct gctcctaacg      20
<210>3504
<211>20
<212>DNA
<400>3504
cgtgtcgaag tgaacgtaga      20
<210>3505
<211>20
<212>DNA
<400>3505
tccgtttcac agtgtcttcc      20
<210>3506
<211>20
<212>DNA
<400>3506
tcgagagtcc cctttctcat      20
<210>3507
<211>20
<212>DNA
<400>3507
cgtgtcgaag tgaacgtaga      20
<210>3508

```

<211>20
<212>DNA
<400>3508
gcagtgc aat taaggaggct 20
<210>3509
<211>20
<212>DNA
<400>3509
ggtagtaatt cgcagcttgc 20
<210>3510
<211>20
<212>DNA
<400>3510
ccaaggcaat tctcggtagt 20
<210>3511
<211>20
<212>DNA
<400>3511
gagccaaaat ctcagtgcgt 20
<210>3512
<211>20
<212>DNA
<400>3512
cgtcacatca acagtgaagc 20
<210>3513
<211>20
<212>DNA
<400>3513
ctttggtcat cagtcgttcg 20
<210>3514
<211>20
<212>DNA
<400>3514
ctcattcctt aaccagctc 20
<210>3515
<211>20
<212>DNA
<400>3515
catccagaaa gaaaagctgc 20
<210>3516
<211>20
<212>DNA
<400>3516
atcggcgacc tggtctctat 20
<210>3517
<211>20
<212>DNA
<400>3517
agcgagacac gctttgcagt 20
<210>3518
<211>20
<212>DNA
<400>3518
cgccaagggc tttaatgtcg 20
<210>3519
<211>20
<212>DNA
<400>3519
cctactcttc gacagtgatg 20
<210>3520
<211>20
<212>DNA
<400>3520
actccagaag gacctggtga 20

<210>3521
<211>20
<212>DNA
<400>3521
gcaatgcaaa cctctctctc 20
<210>3522
<211>20
<212>DNA
<400>3522
cgggcctttaa aatgacctgg 20
<210>3523
<211>20
<212>DNA
<400>3523
gccgacacta agtcagcttt 20
<210>3524
<211>20
<212>DNA
<400>3524
gagcaagagg gttctcgata 20
<210>3525
<211>20
<212>DNA
<400>3525
aactagccaa cgtatagggc 20
<210>3526
<211>20
<212>DNA
<400>3526
caagggctag tgggaaacta 20
<210>3527
<211>20
<212>DNA
<400>3527
gccactctac atagctatcc 20
<210>3528
<211>20
<212>DNA
<400>3528
ccagagtcct tttcttctcc 20
<210>3529
<211>20
<212>DNA
<400>3529
tgcaagggct agtgggaaac 20
<210>3530
<211>20
<212>DNA
<400>3530
ctcgtagaag atcgctcctgt 20
<210>3531
<211>20
<212>DNA
<400>3531
cagcataagt tagcctggct 20
<210>3532
<211>20
<212>DNA
<400>3532
cccctcgaag aggtgttgag 20
<210>3533
<211>20
<212>DNA
<400>3533

tgcggtactac aataccctcg	20
<210>3534	
<211>20	
<212>DNA	
<400>3534	
ggcataacta attacggcgg	20
<210>3535	
<211>20	
<212>DNA	
<400>3535	
gggagaagta cttccacatc	20
<210>3536	
<211>20	
<212>DNA	
<400>3536	
gaacacagaa ggaagcggtt	20
<210>3537	
<211>20	
<212>DNA	
<400>3537	
gtaaggcagc gggtttttggt	20
<210>3538	
<211>20	
<212>DNA	
<400>3538	
cggatctgta accattgcag	20
<210>3539	
<211>20	
<212>DNA	
<400>3539	
gccctatctt ctacgggtctt	20
<210>3540	
<211>20	
<212>DNA	
<400>3540	
gcatgaagga tagtttgagc	20
<210>3541	
<211>20	
<212>DNA	
<400>3541	
cctaggcatg ggtatgcaaa	20
<210>3542	
<211>20	
<212>DNA	
<400>3542	
cgtatacgga cagacttgaa	20
<210>3543	
<211>20	
<212>DNA	
<400>3543	
taccgagtgg tgttcgaaat	20
<210>3544	
<211>20	
<212>DNA	
<400>3544	
gtcgtttcat ctgctttagg	20
<210>3545	
<211>20	
<212>DNA	
<400>3545	
gactcttaga gcagattctg	20
<210>3546	
<211>20	
<212>DNA	

<400>3546
 ccctagtctc caatatccca 20
 <210>3547
 <211>20
 <212>DNA
 <400>3547
 cccacagaaa aggcatacca 20
 <210>3548
 <211>20
 <212>DNA
 <400>3548
 ggcaaacgct tggaattcag 20
 <210>3549
 <211>20
 <212>DNA
 <400>3549
 ggatacagga tttccatggc 20
 <210>3550
 <211>20
 <212>DNA
 <400>3550
 cttaaggcgg ttaggttta 20
 <210>3551
 <211>20
 <212>DNA
 <400>3551
 ggaatcccgt gttcctgaat 20
 <210>3552
 <211>20
 <212>DNA
 <400>3552
 ccatgacttt ccttgtgcct 20
 <210>3553
 <211>20
 <212>DNA
 <400>3553
 gtctggatgat ttgcaaggag 20
 <210>3554
 <211>20
 <212>DNA
 <400>3554
 ggggaataat ccctttgagt 20
 <210>3555
 <211>20
 <212>DNA
 <400>3555
 gcgagcagca tcgtatttca 20
 <210>3556
 <211>20
 <212>DNA
 <400>3556
 gcacgtgcta agattcctct 20
 <210>3557
 <211>20
 <212>DNA
 <400>3557
 ctgctgtac ggcaaatcaa 20
 <210>3558
 <211>20
 <212>DNA
 <400>3558
 gctctgtagt ctgtggtcct 20
 <210>3559
 <211>20

<212>DNA
<400>3559
gcctttgagc tgacgaactt 20
<210>3560
<211>20
<212>DNA
<400>3560
gtaagggacc tgtctctttg 20
<210>3561
<211>20
<212>DNA
<400>3561
cgcaaacagc cgcttcttta 20
<210>3562
<211>20
<212>DNA
<400>3562
cgaggataaa tcggcgaagt 20
<210>3563
<211>20
<212>DNA
<400>3563
tcgtatccac agtggttcct 20
<210>3564
<211>20
<212>DNA
<400>3564
gaaatcggtc gagaggaagt 20
<210>3565
<211>20
<212>DNA
<400>3565
ggcgtgtttg acacgcattt 20
<210>3566
<211>20
<212>DNA
<400>3566
gtgcgtgtag aagtgaaaag 20
<210>3567
<211>20
<212>DNA
<400>3567
gtggctccta ttgaagagag 20
<210>3568
<211>20
<212>DNA
<400>3568
ctcagatttg acagcccaaa 20
<210>3569
<211>20
<212>DNA
<400>3569
ggaaacgctt accgacaaaa 20
<210>3570
<211>20
<212>DNA
<400>3570
tgctcatcca catgtggatg 20
<210>3571
<211>20
<212>DNA
<400>3571
cccggtagag agctcttaaa 20
<210>3572


```

<211>20
<212>DNA
<400>3572
ctgataccct agctgctttg      20
<210>3573
<211>20
<212>DNA
<400>3573
gattgttcta gactgcgctc      20
<210>3574
<211>20
<212>DNA
<400>3574
gacctcgcaa tcctatgatg      20
<210>3575
<211>20
<212>DNA
<400>3575
ggctcttgcg gatgttattg      20
<210>3576
<211>20
<212>DNA
<400>3576
cggggccgcc gtgattatcg      20
<210>3577
<211>20
<212>DNA
<400>3577
cgacgtccct acataggtaa      20
<210>3578
<211>20
<212>DNA
<400>3578
cgctaggcgt gtcttttcttt      20
<210>3579
<211>20
<212>DNA
<400>3579
getgccctca aactcaaaga      20
<210>3580
<211>20
<212>DNA
<400>3580
ggtgcgttcc tcaatggtta      20
<210>3581
<211>20
<212>DNA
<400>3581
ggccctctag gttttgctat      20
<210>3582
<211>20
<212>DNA
<400>3582
tgggggattc gggggccgccg      20
<210>3583
<211>20
<212>DNA
<400>3583
gctgtagaag ctctcaagca      20
<210>3584
<211>20
<212>DNA
<400>3584
gactctagtc tttgctgtgg      20

```

```

<210>3585
<211>20
<212>DNA
<400>3585
gtagttgggc aagtgatggc      20
<210>3586
<211>20
<212>DNA
<400>3586
ttagtccgac gtaatcgtgc     20
<210>3587
<211>20
<212>DNA
<400>3587
gcccatcggt cttgagcatt     20
<210>3588
<211>20
<212>DNA
<400>3588
gatgagagcg tgaaagtgct     20
<210>3589
<211>20
<212>DNA
<400>3589
catcttcagg aaaccgagac     20
<210>3590
<211>20
<212>DNA
<400>3590
ctttccttac acacgacttt     20
<210>3591
<211>20
<212>DNA
<400>3591
gaggggtgagc tacttgtect    20
<210>3592
<211>20
<212>DNA
<400>3592
gctgcgttgg gaaaacattc     20
<210>3593
<211>20
<212>DNA
<400>3593
gatatatcca cctgccggga     20
<210>3594
<211>20
<212>DNA
<400>3594
cactatgcgt ggtaaccaag     20
<210>3595
<211>20
<212>DNA
<400>3595
cccaggattt tcggtaaacc     20
<210>3596
<211>20
<212>DNA
<400>3596
cccgcggtag aatataggat     20
<210>3597
<211>20
<212>DNA
<400>3597

```

cagaagctat ccgttgcgaa 20
<210>3598
<211>20
<212>DNA
<400>3598
cgtagtagaa gagaggatct 20
<210>3599
<211>20
<212>DNA
<400>3599
cggttgactc attggcttcc 20
<210>3600
<211>20
<212>DNA
<400>3600
cgtgggcctt atgaaaatcc 20
<210>3601
<211>20
<212>DNA
<400>3601
cggactctct tgcattacag 20
<210>3602
<211>20
<212>DNA
<400>3602
tcaggaattg ctcttggtca 20
<210>3603
<211>20
<212>DNA
<400>3603
caaaagctct ggggataagg 20
<210>3604
<211>20
<212>DNA
<400>3604
gctcttctgc agcgtgaata 20
<210>3605
<211>20
<212>DNA
<400>3605
cagattccct tctcaaggag 20
<210>3606
<211>20
<212>DNA
<400>3606
cgcagatata gaggggaagc 20
<210>3607
<211>20
<212>DNA
<400>3607
cgctgcttgc taaaaactcg 20
<210>3608
<211>20
<212>DNA
<400>3608
cgtgcttccg tagcgtttta 20
<210>3609
<211>20
<212>DNA
<400>3609
cgtacctttg caaaagcggt 20
<210>3610
<211>20
<212>DNA

```

<400>3610
gctagacgat tgctgaaatc 20
<210>3611
<211>20
<212>DNA
<400>3611
ggaattctat aacaggggcg 20
<210>3612
<211>20
<212>DNA
<400>3612
caggaaacca tgacaattcc 20
<210>3613
<211>20
<212>DNA
<400>3613
gacgatggag ctctttacct 20
<210>3614
<211>20
<212>DNA
<400>3614
cccgagtggg ttatagagtg 20
<210>3615
<211>20
<212>DNA
<400>3615
gcagctctca agaccccaat 20
<210>3616
<211>20
<212>DNA
<400>3616
gagcgaaacc atggatctga 20
<210>3617
<211>20
<212>DNA
<400>3617
agagctgtgg ggttgggggt 20
<210>3618
<211>20
<212>DNA
<400>3618
gctccaagaa tggaaacacc 20
<210>3619
<211>20
<212>DNA
<400>3619
aaacgcggca ttcagcctcg 20
<210>3620
<211>20
<212>DNA
<400>3620
ggctatcttc cgaaagggaa 20
<210>3621
<211>20
<212>DNA
<400>3621
ggacttgatg aaggcgaagt 20
<210>3622
<211>20
<212>DNA
<400>3622
cacatagtgt cgagagccta 20
<210>3623
<211>20

```

```

<212>DNA
<400>3623
aggccttggg cagttcatta 20
<210>3624
<211>20
<212>DNA
<400>3624
ccatcaaaac cacggtcac 20
<210>3625
<211>20
<212>DNA
<400>3625
tggtaatggg gattgggtag 20
<210>3626
<211>20
<212>DNA
<400>3626
gctaaggagt tgtgagaaag 20
<210>3627
<211>20
<212>DNA
<400>3627
gtcagagcaa gaaagaagtg 20
<210>3628
<211>20
<212>DNA
<400>3628
ggaaaagtct catgccaag 20
<210>3629
<211>20
<212>DNA
<400>3629
ggaacaaagc tctccttcag 20
<210>3630
<211>20
<212>DNA
<400>3630
aggggatttc cgtagccttt 20
<210>3631
<211>20
<212>DNA
<400>3631
caggtcctcc aatgcggaaa 20
<210>3632
<211>20
<212>DNA
<400>3632
gaactttgtg gctaagagcc 20
<210>3633
<211>20
<212>DNA
<400>3633
gcatgttccg tggtagagaa 20
<210>3634
<211>20
<212>DNA
<400>3634
gggaagcggt ttgggatgaa 20
<210>3635
<211>20
<212>DNA
<400>3635
gccttttcag gtttcatagt 20
<210>3636

```

<211>20
 <212>DNA
 <400>3636
 aacaagctga ggcattgagga 20
 <210>3637
 <211>20
 <212>DNA
 <400>3637
 gggaagaagc ctctttcacc 20
 <210>3638
 <211>20
 <212>DNA
 <400>3638
 ggcaacaatt tcctgtagag 20
 <210>3639
 <211>20
 <212>DNA
 <400>3639
 gtgaccgttg gtgttctact 20
 <210>3640
 <211>20
 <212>DNA
 <400>3640
 gcaactttgc gcatgaggaa 20
 <210>3641
 <211>20
 <212>DNA
 <400>3641
 aaggatcatg ccagcatacg 20
 <210>3642
 <211>20
 <212>DNA
 <400>3642
 ccaaggaaga cactctacct 20
 <210>3643
 <211>20
 <212>DNA
 <400>3643
 gggaggagaa cgttttttctc 20
 <210>3644
 <211>20
 <212>DNA
 <400>3644
 cttctttcttg ccacaactgt 20
 <210>3645
 <211>20
 <212>DNA
 <400>3645
 gagaatgctt ctagatgcgg 20
 <210>3646
 <211>20
 <212>DNA
 <400>3646
 caaagacatc ggatgtctcc 20
 <210>3647
 <211>20
 <212>DNA
 <400>3647
 ccttgcttcg cttgggaaag 20
 <210>3648
 <211>20
 <212>DNA
 <400>3648
 cgtttggttg ataccgtcct 20

<210>3649
 <211>20
 <212>DNA
 <400>3649
 gagaagggag ggaagaagta 20
 <210>3650
 <211>20
 <212>DNA
 <400>3650
 gcgctctctc aagagaacta 20
 <210>3651
 <211>20
 <212>DNA
 <400>3651
 gcaggaagag gatatacagc 20
 <210>3652
 <211>20
 <212>DNA
 <400>3652
 ggagcccagg aattccaaaa 20
 <210>3653
 <211>20
 <212>DNA
 <400>3653
 agctccgtta gcttgacgag 20
 <210>3654
 <211>20
 <212>DNA
 <400>3654
 ggggagggtta atgagctctt 20
 <210>3655
 <211>20
 <212>DNA
 <400>3655
 gtggaaaggc ctgagattgc 20
 <210>3656
 <211>20
 <212>DNA
 <400>3656
 gggcaatgat ggagagggtta 20
 <210>3657
 <211>20
 <212>DNA
 <400>3657
 ggaggcagag catctaata 20
 <210>3658
 <211>20
 <212>DNA
 <400>3658
 gtagactccc tagttgtggt 20
 <210>3659
 <211>20
 <212>DNA
 <400>3659
 aatcacccctc atggaggctt 20
 <210>3660
 <211>20
 <212>DNA
 <400>3660
 gctgaaacga gttgtgtgga 20
 <210>3661
 <211>20
 <212>DNA
 <400>3661

gtgaggattg ctgttgatg 20
<210>3662
<211>20
<212>DNA
<400>3662
gcccttttga gatgctttgc 20
<210>3663
<211>20
<212>DNA
<400>3663
gtacgtgctt agcaaacgtc 20
<210>3664
<211>20
<212>DNA
<400>3664
ctggagaatc gaacaggaca 20
<210>3665
<211>20
<212>DNA
<400>3665
gagaagcagc gttgttctga 20
<210>3666
<211>20
<212>DNA
<400>3666
gatgggtgtag cgctaggata 20
<210>3667
<211>20
<212>DNA
<400>3667
gggtctacaa cgccttcttt 20
<210>3668
<211>20
<212>DNA
<400>3668
gagaaagcat ttcacgggca 20
<210>3669
<211>20
<212>DNA
<400>3669
gctgtaattt ggcaggcggt 20
<210>3670
<211>20
<212>DNA
<400>3670
aggtgatttg gaagaggctg 20
<210>3671
<211>20
<212>DNA
<400>3671
ggatcaccgc ttgttggttc 20
<210>3672
<211>20
<212>DNA
<400>3672
ggtgtgccaa gcagatgtta 20
<210>3673
<211>20
<212>DNA
<400>3673
cgagtccgta aagagcaaac 20
<210>3674
<211>20
<212>DNA

<400>3674
 cgaaagcagc actgaaagca 20
 <210>3675
 <211>20
 <212>DNA
 <400>3675
 ggctacccat tctcctgcaa 20
 <210>3676
 <211>20
 <212>DNA
 <400>3676
 tgccgatggg aggaatatcg 20
 <210>3677
 <211>20
 <212>DNA
 <400>3677
 cagtcaattg cgtcactgct 20
 <210>3678
 <211>20
 <212>DNA
 <400>3678
 tgcccaaggg actttcacga 20
 <210>3679
 <211>20
 <212>DNA
 <400>3679
 cgaaagcagc actgaaagca 20
 <210>3680
 <211>20
 <212>DNA
 <400>3680
 gggctcgaga aagtagactt 20
 <210>3681
 <211>20
 <212>DNA
 <400>3681
 gacttactgt cccaagtcca 20
 <210>3682
 <211>20
 <212>DNA
 <400>3682
 ctgattacgt tgaggcagtg 20
 <210>3683
 <211>20
 <212>DNA
 <400>3683
 ccagttattt cggcggattg 20
 <210>3684
 <211>20
 <212>DNA
 <400>3684
 cgaattccaa tcgtcttcgc 20
 <210>3685
 <211>20
 <212>DNA
 <400>3685
 ccggggtaaa ttcacagtct 20
 <210>3686
 <211>20
 <212>DNA
 <400>3686
 ctctcttcag gattcgcggt 20
 <210>3687
 <211>20

```

<212>DNA
<400>3687
cttgtggaga tttagcgcct    20
<210>3688
<211>20
<212>DNA
<400>3688
gtgctgctag aataggacct    20
<210>3689
<211>20
<212>DNA
<400>3689
tcttcgcgaa gtggctttga    20
<210>3690
<211>20
<212>DNA
<400>3690
cagtgttgt  gtcaaagcac    20
<210>3691
<211>20
<212>DNA
<400>3691
cttctcgttc agagagggtta    20
<210>3692
<211>20
<212>DNA
<400>3692
atgggtgata ggaggctcag    20
<210>3693
<211>20
<212>DNA
<400>3693
gtgctgctag aataggacct    20
<210>3694
<211>20
<212>DNA
<400>3694
cagcgaaaaa cggatgatgct    20
<210>3695
<211>20
<212>DNA
<400>3695
ggaggagtcg atatggattg    20
<210>3696
<211>20
<212>DNA
<400>3696
cctcagcgac tgcctctaca    20
<210>3697
<211>20
<212>DNA
<400>3697
gcttgtgctg ctttggctat    20
<210>3698
<211>20
<212>DNA
<400>3698
gcggtttaga gggaaagaga    20
<210>3699
<211>20
<212>DNA
<400>3699
ccataggcat gcaaagcttg    20
<210>3700

```

<211>20
<212>DNA
<400>3700
agcctacgcg ctaacgtagt 20
<210>3701
<211>20
<212>DNA
<400>3701
ttgcggagggt aaggatctct 20
<210>3702
<211>20
<212>DNA
<400>3702
ggctgtgcct ttatcagagg 20
<210>3703
<211>20
<212>DNA
<400>3703
cattaggggc gtaggttgta 20
<210>3704
<211>20
<212>DNA
<400>3704
gtctacctca gagagaggtt 20
<210>3705
<211>20
<212>DNA
<400>3705
gctaacgtag tctctgcttc 20
<210>3706
<211>20
<212>DNA
<400>3706
gtccctaagg gacctcttta 20
<210>3707
<211>20
<212>DNA
<400>3707
gctgcacgt tggtaacgct 20
<210>3708
<211>20
<212>DNA
<400>3708
ggccgcttta aatacagcag 20
<210>3709
<211>20
<212>DNA
<400>3709
cggctgattc tctctacgat 20
<210>3710
<211>20
<212>DNA
<400>3710
gtcctaaaag tgacgagtgg 20
<210>3711
<211>20
<212>DNA
<400>3711
gagacgcaac ggctgttttt 20
<210>3712
<211>20
<212>DNA
<400>3712
gtcactgtag ctatgctctc 20

<210>3713
<211>20
<212>DNA
<400>3713
ctcagaatgg acgggctctt 20
<210>3714
<211>20
<212>DNA
<400>3714
gtggtgattg ctttggttcc 20
<210>3715
<211>20
<212>DNA
<400>3715
gtctggcatc cgtccgggtcc 20
<210>3716
<211>20
<212>DNA
<400>3716
gaccatactg ggaatggaga 20
<210>3717
<211>20
<212>DNA
<400>3717
gttcctgact tcacacaagc 20
<210>3718
<211>20
<212>DNA
<400>3718
aggcgtcagc caatccctga 20
<210>3719
<211>20
<212>DNA
<400>3719
gcatagcatg ctcgctcatc 20
<210>3720
<211>20
<212>DNA
<400>3720
ctcctaaaac ggctatacgc 20
<210>3721
<211>20
<212>DNA
<400>3721
caggaaaaag ctagcgtgtc 20
<210>3722
<211>20
<212>DNA
<400>3722
gggacgtatt gtagagagga 20
<210>3723
<211>20
<212>DNA
<400>3723
cgtcagccaa tccctgaata 20
<210>3724
<211>20
<212>DNA
<400>3724
cacagggtatc tacaggaacg 20
<210>3725
<211>20
<212>DNA
<400>3725

cataagccgt ggggaaggc 20
 <210>3726
 <211>20
 <212>DNA
 <400>3726
 cagactcata acgtcgtagc 20
 <210>3727
 <211>20
 <212>DNA
 <400>3727
 ccgtgatgct gagcatagta 20
 <210>3728
 <211>20
 <212>DNA
 <400>3728
 ccgtagaaga aggcatagtg 20
 <210>3729
 <211>20
 <212>DNA
 <400>3729
 tagctgggttc agcattttcg 20
 <210>3730
 <211>20
 <212>DNA
 <400>3730
 tctcctcctt gaagaagcgt 20
 <210>3731
 <211>20
 <212>DNA
 <400>3731
 ggattctcag agacaagacc 20
 <210>3732
 <211>20
 <212>DNA
 <400>3732
 ggggttcaagt tttgctaggg 20
 <210>3733
 <211>20
 <212>DNA
 <400>3733
 ggggtgaagtt cctgagcttt 20
 <210>3734
 <211>20
 <212>DNA
 <400>3734
 ccccccctcca attccaataa 20
 <210>3735
 <211>20
 <212>DNA
 <400>3735
 gcacctaaa tggcaatgtg 20
 <210>3736
 <211>20
 <212>DNA
 <400>3736
 gtgcctgtgg tctttccttt 20
 <210>3737
 <211>20
 <212>DNA
 <400>3737
 cagacctag atgctctatc 20
 <210>3738
 <211>20
 <212>DNA

<400>3738
 gtgaatacga ctatcgccag 20
 <210>3739
 <211>20
 <212>DNA
 <400>3739
 tgttagggttc tccaggagga 20
 <210>3740
 <211>20
 <212>DNA
 <400>3740
 cctagtttga atcgctcggt 20
 <210>3741
 <211>20
 <212>DNA
 <400>3741
 cagagataag catccgcgat 20
 <210>3742
 <211>20
 <212>DNA
 <400>3742
 gggattgccc acaatttcca 20
 <210>3743
 <211>20
 <212>DNA
 <400>3743
 cggtagagcc ttctactgtt 20
 <210>3744
 <211>20
 <212>DNA
 <400>3744
 gggagagaag tctctgagat 20
 <210>3745
 <211>20
 <212>DNA
 <400>3745
 gcactgctgt agttgcttac 20
 <210>3746
 <211>20
 <212>DNA
 <400>3746
 cgagtttcga tacgagctct 20
 <210>3747
 <211>20
 <212>DNA
 <400>3747
 tagaagctcc catctgcttg 20
 <210>3748
 <211>20
 <212>DNA
 <400>3748
 ggcgacaaa tatgactctc 20
 <210>3749
 <211>20
 <212>DNA
 <400>3749
 gtaagtaagc ctcccagaag 20
 <210>3750
 <211>20
 <212>DNA
 <400>3750
 gttcttctat acgctgacag 20
 <210>3751
 <211>20

<212>DNA
<400>3751
gctgagtcca acaaaatggc 20
<210>3752
<211>20
<212>DNA
<400>3752
gcggatgtct tctaatagacc 20
<210>3753
<211>20
<212>DNA
<400>3753
gatggctccc tgaaacacaa 20
<210>3754
<211>20
<212>DNA
<400>3754
gaggttggcg ataaaagctg 20
<210>3755
<211>20
<212>DNA
<400>3755
gcaagcctaa gtttgctgtg 20
<210>3756
<211>20
<212>DNA
<400>3756
aaccgtgagg aaaggagtcg 20
<210>3757
<211>20
<212>DNA
<400>3757
tttgcccttt ccacaacgtc 20
<210>3758
<211>20
<212>DNA
<400>3758
catcgatagg accatcggtt 20
<210>3759
<211>20
<212>DNA
<400>3759
gcaaagtacc tcaaaaccag 20
<210>3760
<211>20
<212>DNA
<400>3760
attccccaat acctaccaac 20
<210>3761
<211>20
<212>DNA
<400>3761
ggagcaacct tccctttgat 20
<210>3762
<211>20
<212>DNA
<400>3762
atctagtgtc acacgcttgc 20
<210>3763
<211>20
<212>DNA
<400>3763
gagatgggtac gtgatttgcc 20
<210>3764

<211>20
<212>DNA
<400>3764
ggagaatgta tctcctgctg 20
<210>3765
<211>20
<212>DNA
<400>3765
catggacgtc tcgactcctt 20
<210>3766
<211>20
<212>DNA
<400>3766
cacctttatc tgtcgaggtc 20
<210>3767
<211>20
<212>DNA
<400>3767
ctgagctcag tttcgaagag 20
<210>3768
<211>20
<212>DNA
<400>3768
ggatacctag ctggtccttag 20
<210>3769
<211>20
<212>DNA
<400>3769
ggttcctttta gggagcactg 20
<210>3770
<211>20
<212>DNA
<400>3770
ggaaaagcgc gtcctttact 20
<210>3771
<211>20
<212>DNA
<400>3771
ctcccatcta tacgaagcct 20
<210>3772
<211>20
<212>DNA
<400>3772
ggtcgaacca aagaggaact 20
<210>3773
<211>20
<212>DNA
<400>3773
agatgcgtcg catttttttc 20
<210>3774
<211>20
<212>DNA
<400>3774
gcaacgcagc agcgagttgc 20
<210>3775
<211>20
<212>DNA
<400>3775
cagctgccta aggaattgga 20
<210>3776
<211>20
<212>DNA
<400>3776
ggttgtatcg agaggagaga 20

<210>3777
 <211>20
 <212>DNA
 <400>3777
 cagctgccta aggaattgga 20
 <210>3778
 <211>20
 <212>DNA
 <400>3778
 ggggagcggg taaagaaatc 20
 <210>3779
 <211>20
 <212>DNA
 <400>3779
 gcatgctttg taccctgagg 20
 <210>3780
 <211>20
 <212>DNA
 <400>3780
 gagggcaaccc tgcattctat 20
 <210>3781
 <211>20
 <212>DNA
 <400>3781
 cagcgagttg cagcatttga 20
 <210>3782
 <211>20
 <212>DNA
 <400>3782
 ggattgcaca gctacgacaa 20
 <210>3783
 <211>20
 <212>DNA
 <400>3783
 cgagaataag cccgtcttct 20
 <210>3784
 <211>20
 <212>DNA
 <400>3784
 cctaaggcac ataagtcagg 20
 <210>3785
 <211>20
 <212>DNA
 <400>3785
 gggattagag cccaacgttc 20
 <210>3786
 <211>20
 <212>DNA
 <400>3786
 gcctggggat cttaggaaat 20
 <210>3787
 <211>20
 <212>DNA
 <400>3787
 gatgggtatg atggtgcgct 20
 <210>3788
 <211>20
 <212>DNA
 <400>3788
 cagacgagga gattcctgta 20
 <210>3789
 <211>20
 <212>DNA
 <400>3789

gattgcacag ctacgacaat 20
<210>3790
<211>20
<212>DNA
<400>3790
ggataggtct gatgtcctac 20
<210>3791
<211>20
<212>DNA
<400>3791
gcgtcgaaaa gtactcgcta 20
<210>3792
<211>20
<212>DNA
<400>3792
ccagaaggac ttttgaggag 20
<210>3793
<211>20
<212>DNA
<400>3793
cggttggtca tactactctc 20
<210>3794
<211>20
<212>DNA
<400>3794
cgaactacag cttgttcctc 20
<210>3795
<211>20
<212>DNA
<400>3795
acaacagttg cggagatgcc 20
<210>3796
<211>20
<212>DNA
<400>3796
cgtccactac cttttcaacc 20
<210>3797
<211>20
<212>DNA
<400>3797
cactatgtgt ctgcgatgtc 20
<210>3798
<211>20
<212>DNA
<400>3798
ggcagagctc tgtgaagaaa 20
<210>3799
<211>20
<212>DNA
<400>3799
gttgcagcct ctacatcctt 20
<210>3800
<211>20
<212>DNA
<400>3800
gcagcagctt ctatattggc 20
<210>3801
<211>20
<212>DNA
<400>3801
cctctacatc cagagcaaac 20
<210>3802
<211>20
<212>DNA

<400>3802
gatgagcgaa agatttcacc 20
<210>3803
<211>20
<212>DNA
<400>3803
cacaacagcc tgggactgga 20
<210>3804
<211>20
<212>DNA
<400>3804
aagagaccga accgatggct 20
<210>3805
<211>20
<212>DNA
<400>3805
cagggaacac ttcagcatcg 20
<210>3806
<211>20
<212>DNA
<400>3806
gcggcatttc ttccccaaat 20
<210>3807
<211>20
<212>DNA
<400>3807
cttctacgac tccacatcat 20
<210>3808
<211>20
<212>DNA
<400>3808
cttcttccgt ccgacgtttt 20
<210>3809
<211>20
<212>DNA
<400>3809
caaataagctg gacacgaggt 20
<210>3810
<211>20
<212>DNA
<400>3810
gggctgctct atatagggcat 20
<210>3811
<211>20
<212>DNA
<400>3811
cgcatgaatc cgcatcatca 20
<210>3812
<211>20
<212>DNA
<400>3812
ggccatcttc tctaattctc 20
<210>3813
<211>20
<212>DNA
<400>3813
gatgggttcc ttctccttca 20
<210>3814
<211>20
<212>DNA
<400>3814
gaggcctttg ccaaaagtaa 20
<210>3815
<211>20

<212>DNA
<400>3815
ggttcatctc caaagcgatt 20
<210>3816
<211>20
<212>DNA
<400>3816
cctgcgagtt ttcctaaagg 20
<210>3817
<211>20
<212>DNA
<400>3817
agttctgggg atcccttagg 20
<210>3818
<211>20
<212>DNA
<400>3818
atttcacctt cgacagcgca 20
<210>3819
<211>20
<212>DNA
<400>3819
accagaaaa acgtgccgtt 20
<210>3820
<211>20
<212>DNA
<400>3820
agcaagccga gcacaagaat 20
<210>3821
<211>20
<212>DNA
<400>3821
gggtctcttg aacctgcatt 20
<210>3822
<211>20
<212>DNA
<400>3822
cggagacaag caaaccaaga 20
<210>3823
<211>20
<212>DNA
<400>3823
accttctcca gtaacactgc 20
<210>3824
<211>20
<212>DNA
<400>3824
cagcattccc ccacaagata 20
<210>3825
<211>20
<212>DNA
<400>3825
gggacttctc gtttcttcag 20
<210>3826
<211>20
<212>DNA
<400>3826
ctgtgatgtc atcatgctca 20
<210>3827
<211>20
<212>DNA
<400>3827
ggctacttct ataggttggg 20
<210>3828

<211>20
<212>DNA
<400>3828
ttcggaccat agtcgcatga 20
<210>3829
<211>20
<212>DNA
<400>3829
gggtatcctc aaccacaaag 20
<210>3830
<211>20
<212>DNA
<400>3830
gcggagatag aagtacttgc 20
<210>3831
<211>20
<212>DNA
<400>3831
aaaccggaat cccctggaa 20
<210>3832
<211>20
<212>DNA
<400>3832
ccaagagcgc gagatttact 20
<210>3833
<211>20
<212>DNA
<400>3833
gcggctgcct taaaatcttc 20
<210>3834
<211>20
<212>DNA
<400>3834
ccaagagcgc gagatttact 20
<210>3835
<211>20
<212>DNA
<400>3835
gcggctgcct taaaatcttc 20
<210>3836
<211>20
<212>DNA
<400>3836
ctcatcggtc tcattcagcc 20
<210>3837
<211>20
<212>DNA
<400>3837
ccatctgtag ccgatgatgt 20
<210>3838
<211>20
<212>DNA
<400>3838
ttccctggtc gtaagcaaag 20
<210>3839
<211>20
<212>DNA
<400>3839
gttatctcca gtatcagggc 20
<210>3840
<211>20
<212>DNA
<400>3840
ccaagccaaa atcttgggag 20

<210>3841
<211>20
<212>DNA
<400>3841
gtatcaccac ccggcatcct 20
<210>3842
<211>20
<212>DNA
<400>3842
gctcctatcg tattgccttc 20
<210>3843
<211>20
<212>DNA
<400>3843
gcgtggtatc ctgcaatctt 20
<210>3844
<211>20
<212>DNA
<400>3844
ctctcatcgc taattgccag 20
<210>3845
<211>20
<212>DNA
<400>3845
gaacttccag gagacgcaat 20
<210>3846
<211>20
<212>DNA
<400>3846
ggggaaaagaa gacttcattg 20
<210>3847
<211>20
<212>DNA
<400>3847
ccttcgtttg cagtctccat 20
<210>3848
<211>20
<212>DNA
<400>3848
gctcctgtga ccttattgtc 20
<210>3849
<211>20
<212>DNA
<400>3849
ggactaaagc ttgtcttgcc 20
<210>3850
<211>20
<212>DNA
<400>3850
ttcacgagct tctgttccct 20
<210>3851
<211>20
<212>DNA
<400>3851
atactaaggc acctgcagca 20
<210>3852
<211>20
<212>DNA
<400>3852
gtgcaaagtc tgaacgctac 20
<210>3853
<211>20
<212>DNA
<400>3853

gaacttggtgc tccggtcct 20
 <210>3854
 <211>20
 <212>DNA
 <400>3854
 gccgtcgcct taatgatagc 20
 <210>3855
 <211>20
 <212>DNA
 <400>3855
 acctgcatct accgacagga 20
 <210>3856
 <211>20
 <212>DNA
 <400>3856
 ctgccttgca tttcttcctg 20
 <210>3857
 <211>20
 <212>DNA
 <400>3857
 gggatgactt gcacattcca 20
 <210>3858
 <211>20
 <212>DNA
 <400>3858
 tccctccgc tcctggagat 20
 <210>3859
 <211>20
 <212>DNA
 <400>3859
 gactaccac atcttgagca 20
 <210>3860
 <211>20
 <212>DNA
 <400>3860
 gagaatgaac ctctgtgtc 20
 <210>3861
 <211>20
 <212>DNA
 <400>3861
 tgtgggtcaa agcctgaagc 20
 <210>3862
 <211>20
 <212>DNA
 <400>3862
 ggtctagaag gagctacttc 20
 <210>3863
 <211>20
 <212>DNA
 <400>3863
 ctgagtaaga ctaaccctcg 20
 <210>3864
 <211>20
 <212>DNA
 <400>3864
 cgttctctcc atgattatgc 20
 <210>3865
 <211>20
 <212>DNA
 <400>3865
 gaacttgccg cacaaaaggc 20
 <210>3866
 <211>20
 <212>DNA

<400>3866
 ggatgggtcag agctactaca 20
 <210>3867
 <211>20
 <212>DNA
 <400>3867
 ggggatcatc aggtaatcca 20
 <210>3868
 <211>20
 <212>DNA
 <400>3868
 ccttgaggaa tcagacgcat 20
 <210>3869
 <211>20
 <212>DNA
 <400>3869
 gctgtctgct atgagcatag 20
 <210>3870
 <211>20
 <212>DNA
 <400>3870
 ccttgatgaa gcgaacaacc 20
 <210>3871
 <211>20
 <212>DNA
 <400>3871
 cgggtttgag gattagtgag 20
 <210>3872
 <211>20
 <212>DNA
 <400>3872
 ggggatcatc aggtaatcca 20
 <210>3873
 <211>20
 <212>DNA
 <400>3873
 gcctctccgc atacattaag 20
 <210>3874
 <211>20
 <212>DNA
 <400>3874
 tcgacgttct ggactttcag 20
 <210>3875
 <211>20
 <212>DNA
 <400>3875
 ccgacagacc cataactatc 20
 <210>3876
 <211>20
 <212>DNA
 <400>3876
 gaagcgcaaa gtctctgaac 20
 <210>3877
 <211>20
 <212>DNA
 <400>3877
 gccccaaaag atgcctctga 20
 <210>3878
 <211>20
 <212>DNA
 <400>3878
 acgtgccgca acacaaaagc 20
 <210>3879
 <211>20


```

<212>DNA
<400>3879
gccaaagttga acccttggtc      20
<210>3880
<211>20
<212>DNA
<400>3880
atctcctcca cccgtacaac      20
<210>3881
<211>20
<212>DNA
<400>3881
cgtacgtggt gatctatcca      20
<210>3882
<211>20
<212>DNA
<400>3882
gactatgaag agcttcctgc      20
<210>3883
<211>20
<212>DNA
<400>3883
gagtttccta tcatgcggac      20
<210>3884
<211>20
<212>DNA
<400>3884
cgccatgttc ctgattatgc      20
<210>3885
<211>20
<212>DNA
<400>3885
cttaggaaaa agctctggca      20
<210>3886
<211>20
<212>DNA
<400>3886
cttggaataa ctacccccta      20
<210>3887
<211>20
<212>DNA
<400>3887
gctgcggatt aggagaaatc      20
<210>3888
<211>20
<212>DNA
<400>3888
cttaggaaaa agctctggca      20
<210>3889
<211>20
<212>DNA
<400>3889
cgaaacgatc gtaagagtcg      20
<210>3890
<211>20
<212>DNA
<400>3890
gggacgtccc gttttcaata      20
<210>3891
<211>20
<212>DNA
<400>3891
cgttcgcagg atttaatccc      20
<210>3892

```

<211>20
 <212>DNA
 <400>3892
 gcaactccct gaaaagagag 20
 <210>3893
 <211>20
 <212>DNA
 <400>3893
 ggagtttcta cagaaatgcg 20
 <210>3894
 <211>20
 <212>DNA
 <400>3894
 acgatctaca ggctctccaa 20
 <210>3895
 <211>20
 <212>DNA
 <400>3895
 gcagttggtg tagtgctaca 20
 <210>3896
 <211>20
 <212>DNA
 <400>3896
 ggaccagtct ttaccaggaa 20
 <210>3897
 <211>20
 <212>DNA
 <400>3897
 gtgtcgggct ctctttttga 20
 <210>3898
 <211>20
 <212>DNA
 <400>3898
 gagtctcggg ataaggagag 20
 <210>3899
 <211>20
 <212>DNA
 <400>3899
 ccttacctcc aactctacct 20
 <210>3900
 <211>20
 <212>DNA
 <400>3900
 gattaaataa cctcagcgca 20
 <210>3901
 <211>20
 <212>DNA
 <400>3901
 atgctctgtg ctcttcttcc 20
 <210>3902
 <211>20
 <212>DNA
 <400>3902
 gctacacaac cccaatatcc 20
 <210>3903
 <211>20
 <212>DNA
 <400>3903
 ggtctctgcg tatttcagga 20
 <210>3904
 <211>20
 <212>DNA
 <400>3904
 gtggagctcc caacataaga 20

<210>3905
<211>20
<212>DNA
<400>3905
gcacattggc acgactagaa 20
<210>3906
<211>20
<212>DNA
<400>3906
ggctctcctt gaaacccaca 20
<210>3907
<211>20
<212>DNA
<400>3907
ccttgcaaag aggctttagc 20
<210>3908
<211>20
<212>DNA
<400>3908
gtcccgtaac ttcctgttct 20
<210>3909
<211>20
<212>DNA
<400>3909
gcagcggata cgctaagaaa 20
<210>3910
<211>20
<212>DNA
<400>3910
gcctctccac aaatgctaac 20
<210>3911
<211>20
<212>DNA
<400>3911
ggaattcgtg gtacagggaa 20
<210>3912
<211>20
<212>DNA
<400>3912
ggcagcacta gaaaacacag 20
<210>3913
<211>20
<212>DNA
<400>3913
ccatcgcgat caaacacata 20
<210>3914
<211>20
<212>DNA
<400>3914
ccctgaagat ccagaagtca 20
<210>3915
<211>20
<212>DNA
<400>3915
tcgagaagaa atcgacccta 20
<210>3916
<211>20
<212>DNA
<400>3916
cccacctaca aagaacagag 20
<210>3917
<211>20
<212>DNA
<400>3917

ctcctccttg acgtcttgta 20
<210>3918
<211>20
<212>DNA
<400>3918
ggagcctccc accgtggtat 20
<210>3919
<211>20
<212>DNA
<400>3919
gcctctacaa cagagactgc 20
<210>3920
<211>20
<212>DNA
<400>3920
gccatcgca tcaaacacat 20
<210>3921
<211>20
<212>DNA
<400>3921
gactctttgt acgcacgttg 20
<210>3922
<211>20
<212>DNA
<400>3922
gctcctgatc atgcaattcc 20
<210>3923
<211>20
<212>DNA
<400>3923
ttgtacctca tggatcaggc 20
<210>3924
<211>20
<212>DNA
<400>3924
cctcgactcg agatagcata 20
<210>3925
<211>20
<212>DNA
<400>3925
gcagtgcgca cttctatgtc 20
<210>3926
<211>20
<212>DNA
<400>3926
ctgtggtgct atcggaatca 20
<210>3927
<211>20
<212>DNA
<400>3927
tctgcaatcg ctcttcgcta 20
<210>3928
<211>20
<212>DNA
<400>3928
cgatctcttg gaatctcctc 20
<210>3929
<211>20
<212>DNA
<400>3929
ctaagacaac cacttccgct 20
<210>3930
<211>20
<212>DNA

<400>3930
 gatcaggccc tctagatacc 20
 <210>3931
 <211>20
 <212>DNA
 <400>3931
 gtgatgccat cgtgaccaaa 20
 <210>3932
 <211>20
 <212>DNA
 <400>3932
 tgatcggggg gtagctgtgg 20
 <210>3933
 <211>20
 <212>DNA
 <400>3933
 ccagcccttg agtttcaaac 20
 <210>3934
 <211>20
 <212>DNA
 <400>3934
 ctaaattctct gctcagcacg 20
 <210>3935
 <211>20
 <212>DNA
 <400>3935
 gcgactatga aggaacacga 20
 <210>3936
 <211>20
 <212>DNA
 <400>3936
 gagttgtaag tgtcatgcga 20
 <210>3937
 <211>20
 <212>DNA
 <400>3937
 atatcagact caggaagccc 20
 <210>3938
 <211>20
 <212>DNA
 <400>3938
 acagaaagag tgtgtcgagg 20
 <210>3939
 <211>20
 <212>DNA
 <400>3939
 ccccttcgt tattgctttc 20
 <210>3940
 <211>20
 <212>DNA
 <400>3940
 ggatcacgca ggtaaattgga 20
 <210>3941
 <211>20
 <212>DNA
 <400>3941
 gtccccagg ctcgatctgg 20
 <210>3942
 <211>20
 <212>DNA
 <400>3942
 caaccgcctg ttacctaaca 20
 <210>3943
 <211>20

```

<212>DNA
<400>3943
cagacctcat acgtatccga      20
<210>3944
<211>20
<212>DNA
<400>3944
tcttctacga gtgcgattgc      20
<210>3945
<211>20
<212>DNA
<400>3945
cttcaagctg tgcaggatct      20
<210>3946
<211>20
<212>DNA
<400>3946
ctccttcctc ctagagaaga      20
<210>3947
<211>20
<212>DNA
<400>3947
cctcccgaag ccatataaac      20
<210>3948
<211>20
<212>DNA
<400>3948
ttccttcgat ggatgaggga      20
<210>3949
<211>20
<212>DNA
<400>3949
gagaacatga ggaacgagag      20
<210>3950
<211>20
<212>DNA
<400>3950
cacccgacag tgtctatagt      20
<210>3951
<211>20
<212>DNA
<400>3951
cctcggctcc aaatacgaat      20
<210>3952
<211>20
<212>DNA
<400>3952
gcttggctctg gtataatcca      20
<210>3953
<211>20
<212>DNA
<400>3953
ggagatttag cccaagtgta      20
<210>3954
<211>20
<212>DNA
<400>3954
ggctccaaag cgtcataatc      20
<210>3955
<211>20
<212>DNA
<400>3955
gccgtgcttt aaagccaaac      20
<210>3956

```

<211>20
<212>DNA
<400>3956
cttgactctt tcgatcgag 20
<210>3957
<211>20
<212>DNA
<400>3957
cttggatcat gagtgcttgg 20
<210>3958
<211>20
<212>DNA
<400>3958
gaagttctcc tctgaatcc 20
<210>3959
<211>20
<212>DNA
<400>3959
gagtccttga agaagggact 20
<210>3960
<211>20
<212>DNA
<400>3960
ctcgggagtg tttgcctaaa 20
<210>3961
<211>20
<212>DNA
<400>3961
gaatcgaggc ttgggatgcc 20
<210>3962
<211>20
<212>DNA
<400>3962
agccacgccc attccgattc 20
<210>3963
<211>20
<212>DNA
<400>3963
cgagcttcaa gagcttgtct 20
<210>3964
<211>20
<212>DNA
<400>3964
cgccacgatg aattgctttg 20
<210>3965
<211>20
<212>DNA
<400>3965
ggaggagtgt gatctgatgt 20
<210>3966
<211>20
<212>DNA
<400>3966
cggatgtaat gtagaccgtg 20
<210>3967
<211>20
<212>DNA
<400>3967
ggccggtcga gatctataat 20
<210>3968
<211>20
<212>DNA
<400>3968
gcaaactctga cacgatgcaa 20

<210>3969
<211>20
<212>DNA
<400>3969
ctgacgatta cgcttggtgt 20
<210>3970
<211>20
<212>DNA
<400>3970
aaacacgaat accttaggtc 20
<210>3971
<211>20
<212>DNA
<400>3971
ggaccttaga gacctgtct 20
<210>3972
<211>20
<212>DNA
<400>3972
gattgtgtgg gatttgccat 20
<210>3973
<211>20
<212>DNA
<400>3973
gatataaagg aaagaggccg 20
<210>3974
<211>20
<212>DNA
<400>3974
ccctgaacct tttcaatgac 20
<210>3975
<211>20
<212>DNA
<400>3975
cagaattgag gaggatcctg 20
<210>3976
<211>20
<212>DNA
<400>3976
gggtgacata gagggtcttt 20
<210>3977
<211>20
<212>DNA
<400>3977
ctaggaaacg tcgccccacg 20
<210>3978
<211>20
<212>DNA
<400>3978
gctagcattt caacgtgaac 20
<210>3979
<211>20
<212>DNA
<400>3979
gtcccccttc tagtgaagtt 20
<210>3980
<211>20
<212>DNA
<400>3980
gaggatcggg atggtggggg 20
<210>3981
<211>20
<212>DNA
<400>3981

cgggatctat ggtatcctcg 20
<210>3982
<211>20
<212>DNA
<400>3982
ctctacagca gcactgctta 20
<210>3983
<211>20
<212>DNA
<400>3983
caagcgatca accagcatca 20
<210>3984
<211>20
<212>DNA
<400>3984
gtccccctcat ttcgagtcta 20
<210>3985
<211>20
<212>DNA
<400>3985
ggtgctcttc atttccccta 20
<210>3986
<211>20
<212>DNA
<400>3986
aaacggatcc tgccacagcg 20
<210>3987
<211>20
<212>DNA
<400>3987
gttcagcatc ttcttgagag 20
<210>3988
<211>20
<212>DNA
<400>3988
ctggctggcc tagtgggtag 20
<210>3989
<211>20
<212>DNA
<400>3989
cgtgcttgct taccattca 20
<210>3990
<211>20
<212>DNA
<400>3990
cgtgcttgct taccattca 20
<210>3991
<211>20
<212>DNA
<400>3991
ttagctgcag gaggtttggc 20
<210>3992
<211>20
<212>DNA
<400>3992
aagactcgtc agtcagatgc 20
<210>3993
<211>20
<212>DNA
<400>3993
ccttccagcg aggaaaacta 20
<210>3994
<211>20
<212>DNA

<400>3994
ggcttatctt gagttgcagc 20
<210>3995
<211>20
<212>DNA
<400>3995
gccagcatct tgtaacttct 20
<210>3996
<211>20
<212>DNA
<400>3996
ggtaaaaaaa cggctccacg 20
<210>3997
<211>20
<212>DNA
<400>3997
cccgtttcat cggttaaacg 20
<210>3998
<211>20
<212>DNA
<400>3998
tctacctcta aacctgcagc 20
<210>3999
<211>20
<212>DNA
<400>3999
ataacgccct acacgtccta 20
<210>4000
<211>20
<212>DNA
<400>4000
ttctgtaggt tcggcagcaa 20
<210>4001
<211>20
<212>DNA
<400>4001
gaaagagagg tgatcagacc 20
<210>4002
<211>20
<212>DNA
<400>4002
gaaaacctct tctaaaccga 20
<210>4003
<211>20
<212>DNA
<400>4003
gcaacaacaa tagctccaga 20
<210>4004
<211>20
<212>DNA
<400>4004
cgcagcaaca ttcccaatct 20
<210>4005
<211>20
<212>DNA
<400>4005
ctgttcggaa acttcagtcc 20
<210>4006
<211>20
<212>DNA
<400>4006
gtcttcttcg gtacgacgat 20
<210>4007
<211>20

<212>DNA
<400>4007
ggctacttca ggagatgcaa 20
<210>4008
<211>20
<212>DNA
<400>4008
gggttcttgg gccactttta 20
<210>4009
<211>20
<212>DNA
<400>4009
aaaacaagag cactgcgcgg 20
<210>4010
<211>20
<212>DNA
<400>4010
ccgacacagt agcatttcca 20
<210>4011
<211>20
<212>DNA
<400>4011
ggaactaaga tccagaaccc 20
<210>4012
<211>20
<212>DNA
<400>4012
ctcttcatgg ggacgtgtat 20
<210>4013
<211>20
<212>DNA
<400>4013
cgatcttgag aagacttatg 20
<210>4014
<211>20
<212>DNA
<400>4014
gagctatgct atgtgctttg 20
<210>4015
<211>20
<212>DNA
<400>4015
tccgtcaaag cgtacacgta 20
<210>4016
<211>20
<212>DNA
<400>4016
gattctggta gctgagtagg 20
<210>4017
<211>20
<212>DNA
<400>4017
cctcgctcat aaaaagcagc 20
<210>4018
<211>20
<212>DNA
<400>4018
cctgagcaag tttggttctg 20
<210>4019
<211>20
<212>DNA
<400>4019
ccaccaaaaa cctggagagt 20
<210>4020

<211>20
<212>DNA
<400>4020
gcgttctgct ggagataaca 20
<210>4021
<211>20
<212>DNA
<400>4021
cgggggtccct aaaagagaat 20
<210>4022
<211>20
<212>DNA
<400>4022
gtctccctaa gaacgtgaca 20
<210>4023
<211>20
<212>DNA
<400>4023
cctcggagac aatatcttcg 20
<210>4024
<211>20
<212>DNA
<400>4024
gacctcaaca ccagctatgt 20
<210>4025
<211>20
<212>DNA
<400>4025
cctcctaatt cataggggaac 20
<210>4026
<211>20
<212>DNA
<400>4026
cctcggagac aatatcttcg 20
<210>4027
<211>20
<212>DNA
<400>4027
ccacatccta tagcacttcc 20
<210>4028
<211>20
<212>DNA
<400>4028
ccatgtcctt catctatccg 20
<210>4029
<211>20
<212>DNA
<400>4029
cgacacgaag cttataaggc 20
<210>4030
<211>20
<212>DNA
<400>4030
cacgggaagg catttccctca 20
<210>4031
<211>20
<212>DNA
<400>4031
ggaccattca ccaaagtcgt 20
<210>4032
<211>20
<212>DNA
<400>4032
cgggttctgt atcctgaaag 20

<210>4033
 <211>20
 <212>DNA
 <400>4033
 cctcctcaag ctgatgaatc 20
 <210>4034
 <211>20
 <212>DNA
 <400>4034
 acaggaacaa caccaggatg 20
 <210>4035
 <211>20
 <212>DNA
 <400>4035
 ggcttttctga tcctcaagag 20
 <210>4036
 <211>20
 <212>DNA
 <400>4036
 ggccactcgg taatctacat 20
 <210>4037
 <211>20
 <212>DNA
 <400>4037
 gaggtgcct ctaaattctca 20
 <210>4038
 <211>20
 <212>DNA
 <400>4038
 gcgtgtgatc atactgtcct 20
 <210>4039
 <211>20
 <212>DNA
 <400>4039
 ggaaccactc ttcattctaac 20
 <210>4040
 <211>20
 <212>DNA
 <400>4040
 ggttcttctg ctgtgtactc 20
 <210>4041
 <211>20
 <212>DNA
 <400>4041
 cttcttcgat caactgggct 20
 <210>4042
 <211>20
 <212>DNA
 <400>4042
 gtctgcagga ctttttagctc 20
 <210>4043
 <211>20
 <212>DNA
 <400>4043
 gtagagcaat tagctgccag 20
 <210>4044
 <211>20
 <212>DNA
 <400>4044
 cttcttcgat caactgggct 20
 <210>4045
 <211>20
 <212>DNA
 <400>4045

agccgagcac tttgtgcaac 20
<210>4046
<211>20
<212>DNA
<400>4046
cgatcaactg ggctatagaa 20
<210>4047
<211>20
<212>DNA
<400>4047
ccgagcactt tgtgcaactt 20
<210>4048
<211>20
<212>DNA
<400>4048
ctcgcgtcgt tctcccacta 20
<210>4049
<211>20
<212>DNA
<400>4049
gagacaccgc atctttggtt 20
<210>4050
<211>20
<212>DNA
<400>4050
cccataactca gaggcacaaa 20
<210>4051
<211>20
<212>DNA
<400>4051
gacaaggaag gacgaaagaa 20
<210>4052
<211>20
<212>DNA
<400>4052
cccaccgaca atgatcacta 20
<210>4053
<211>20
<212>DNA
<400>4053
caggttatgt gttccgctca 20
<210>4054
<211>20
<212>DNA
<400>4054
gaatgaaggc ttcggactct 20
<210>4055
<211>20
<212>DNA
<400>4055
ggaacaaatc ccatcgaagc 20
<210>4056
<211>20
<212>DNA
<400>4056
cgtctacttg ggacccccca 20
<210>4057
<211>20
<212>DNA
<400>4057
ctgaagaatt ccccatctgg 20
<210>4058
<211>20
<212>DNA

<400>4058
gggcttcttg atcatagatg 20
<210>4059
<211>20
<212>DNA
<400>4059
tgcacaacct cgtcttgtca 20
<210>4060
<211>20
<212>DNA
<400>4060
tctacgcgcc tcctgaaaat 20
<210>4061
<211>20
<212>DNA
<400>4061
gttgtggggg tgtatagggt 20
<210>4062
<211>20
<212>DNA
<400>4062
ccagactcta tggtttctcc 20
<210>4063
<211>20
<212>DNA
<400>4063
cccaacgtcc tatacgattg 20
<210>4064
<211>20
<212>DNA
<400>4064
ctcctacctc tccaacagga 20
<210>4065
<211>20
<212>DNA
<400>4065
cggaatcatt ctgaagaggc 20
<210>4066
<211>20
<212>DNA
<400>4066
gagtttgtca aggacgagag 20
<210>4067
<211>20
<212>DNA
<400>4067
tgatagccca atcacgagcg 20
<210>4068
<211>20
<212>DNA
<400>4068
cggatagtcg agaatttggc 20
<210>4069
<211>20
<212>DNA
<400>4069
cctgactcta agacacaatg 20
<210>4070
<211>20
<212>DNA
<400>4070
ggcaacttct ccctatgtct 20
<210>4071
<211>20

<212>DNA
<400>4071
gtaaacgctt caccacagtt 20
<210>4072
<211>20
<212>DNA
<400>4072
ctgtgcaggc tgtcttacat 20
<210>4073
<211>20
<212>DNA
<400>4073
gctgacaaat cgcctagaag 20
<210>4074
<211>20
<212>DNA
<400>4074
cggtttaaat actcggcaac 20
<210>4075
<211>20
<212>DNA
<400>4075
ggatctctcc catccatttc 20
<210>4076
<211>20
<212>DNA
<400>4076
actcacggca ccattgagat 20
<210>4077
<211>20
<212>DNA
<400>4077
tttcgaaact ggttcacgtc 20
<210>4078
<211>20
<212>DNA
<400>4078
ggggaaacat gcttccagat 20
<210>4079
<211>20
<212>DNA
<400>4079
caggacatag tccctatac 20
<210>4080
<211>20
<212>DNA
<400>4080
gtccctgct ttactaaagc 20
<210>4081
<211>20
<212>DNA
<400>4081
cgaacttggg ctcggtgttt 20
<210>4082
<211>20
<212>DNA
<400>4082
agctgaagtg acaggctctg 20
<210>4083
<211>20
<212>DNA
<400>4083
ggaccataac gtcgtattgc 20
<210>4084

<211>20
<212>DNA
<400>4084
gccttcatga ggaagacaaa 20
<210>4085
<211>20
<212>DNA
<400>4085
ccctgtacgc ttgatttaag 20
<210>4086
<211>20
<212>DNA
<400>4086
gcaacacgat gcaaggatac 20
<210>4087
<211>20
<212>DNA
<400>4087
cgtctcctaa caatctacgg 20
<210>4088
<211>20
<212>DNA
<400>4088
ctccaggaaa tacctttccc 20
<210>4089
<211>20
<212>DNA
<400>4089
caaccccaga aatcttagac 20
<210>4090
<211>20
<212>DNA
<400>4090
gcctgacgat ccaaaagtct 20
<210>4091
<211>20
<212>DNA
<400>4091
cgaacaagtt gacgcacttc 20
<210>4092
<211>20
<212>DNA
<400>4092
ctttctttcc acagtagggc 20
<210>4093
<211>20
<212>DNA
<400>4093
gcgggggaaa aaattggtga 20
<210>4094
<211>20
<212>DNA
<400>4094
ggtacatata cacgtactct 20
<210>4095
<211>20
<212>DNA
<400>4095
cggtggcgat aaggtaatgc 20
<210>4096
<211>20
<212>DNA
<400>4096
cctcgcactt tatgatgctc 20

<210>4097
<211>20
<212>DNA
<400>4097
cccaaccttt ggaactagga 20
<210>4098
<211>20
<212>DNA
<400>4098
ccagcactcc ttagaagaac 20
<210>4099
<211>20
<212>DNA
<400>4099
cctaagttgt ccgaagtcac 20
<210>4100
<211>20
<212>DNA
<400>4100
gcacaaggga acatcgatct 20
<210>4101
<211>20
<212>DNA
<400>4101
cataatctct gcacagctgc 20
<210>4102
<211>20
<212>DNA
<400>4102
ctctggcttc aaagtcctct 20
<210>4103
<211>20
<212>DNA
<400>4103
ccccaatctc tcccctaagc 20
<210>4104
<211>20
<212>DNA
<400>4104
ccacaactag aaatagctcc 20
<210>4105
<211>20
<212>DNA
<400>4105
cccaactccc gctagatcaa 20
<210>4106
<211>20
<212>DNA
<400>4106
gcacttcaga tagatggctc 20
<210>4107
<211>20
<212>DNA
<400>4107
ctctgcctag ttctcttcgg 20
<210>4108
<211>20
<212>DNA
<400>4108
ccgtcatatt taaaaggcgg 20
<210>4109
<211>20
<212>DNA
<400>4109

ctcgaaaaaa cacccttat 20
 <210>4110
 <211>20
 <212>DNA
 <400>4110
 gcattgctag gggcgatatt 20
 <210>4111
 <211>20
 <212>DNA
 <400>4111
 cacggctatg aagagatgtc 20
 <210>4112
 <211>20
 <212>DNA
 <400>4112
 gggagtcatt gcagtcatac 20
 <210>4113
 <211>20
 <212>DNA
 <400>4113
 cacctactac ttccctgtag 20
 <210>4114
 <211>20
 <212>DNA
 <400>4114
 gaaagcacct tcttgagtgc 20
 <210>4115
 <211>20
 <212>DNA
 <400>4115
 cccatcctcc ggagtatttt 20
 <210>4116
 <211>20
 <212>DNA
 <400>4116
 cgcttttctg tgtgtattcg 20
 <210>4117
 <211>20
 <212>DNA
 <400>4117
 ccatgtcacg cgctttctta 20
 <210>4118
 <211>20
 <212>DNA
 <400>4118
 cgatggaaaa acatacgcac 20
 <210>4119
 <211>20
 <212>DNA
 <400>4119
 ccccagagaa ataacagacc 20
 <210>4120
 <211>20
 <212>DNA
 <400>4120
 cccattcca cgttcttaca 20
 <210>4121
 <211>20
 <212>DNA
 <400>4121
 gagacctttt tctttgggaa 20
 <210>4122
 <211>20
 <212>DNA

<400>4122
gctaccaaag caagcacaga 20
<210>4123
<211>20
<212>DNA
<400>4123
ggcgctatca tttgtcagca 20
<210>4124
<211>20
<212>DNA
<400>4124
caaaactctc agaggctctc 20
<210>4125
<211>20
<212>DNA
<400>4125
gaggtatcga caaagccgta 20
<210>4126
<211>20
<212>DNA
<400>4126
cccaagtcac tgtaggaaga 20
<210>4127
<211>20
<212>DNA
<400>4127
gtgaaatcat ggccgtccta 20
<210>4128
<211>20
<212>DNA
<400>4128
actcctcaca acagaagcct 20
<210>4129
<211>20
<212>DNA
<400>4129
cgctttgtta tcgtgattgc 20
<210>4130
<211>20
<212>DNA
<400>4130
cgtgctgagg tccttgtttt 20
<210>4131
<211>20
<212>DNA
<400>4131
ccgaattctc tccctctcat 20
<210>4132
<211>20
<212>DNA
<400>4132
ggtctgactt cccactcaat 20
<210>4133
<211>20
<212>DNA
<400>4133
gccacagaaa aagtaggtcc 20
<210>4134
<211>20
<212>DNA
<400>4134
gtcgacagct ctagaaagca 20
<210>4135
<211>20

<212>DNA
<400>4135
ggaggcatct caacaactga 20
<210>4136
<211>20
<212>DNA
<400>4136
gccgaattac aacccccatt 20
<210>4137
<211>20
<212>DNA
<400>4137
ccccctacaa gcaaaccaaa 20
<210>4138
<211>20
<212>DNA
<400>4138
tggcaagcag gacaacttga 20
<210>4139
<211>20
<212>DNA
<400>4139
ccaaccagct cttcccttta 20
<210>4140
<211>20
<212>DNA
<400>4140
cgatatccaa gtgttacgtg 20
<210>4141
<211>20
<212>DNA
<400>4141
ggaggtttag tagaccctcg 20
<210>4142
<211>20
<212>DNA
<400>4142
atgaaggaga atggcgccta 20
<210>4143
<211>20
<212>DNA
<400>4143
cggtagtttt ttgcgtectg 20
<210>4144
<211>20
<212>DNA
<400>4144
gaggctgcta cacaagtaac 20
<210>4145
<211>20
<212>DNA
<400>4145
ccaccttgtg cttgtcaaac 20
<210>4146
<211>20
<212>DNA
<400>4146
gcacttcgag atttctagag 20
<210>4147
<211>20
<212>DNA
<400>4147
ccataaaaatt caccccaagc 20
<210>4148

<211>20
<212>DNA
<400>4148
ccttgtgctt gtcaaacata 20
<210>4149
<211>20
<212>DNA
<400>4149
taccgaagct cagctacacg 20
<210>4150
<211>20
<212>DNA
<400>4150
ggggatagga agcaagaatg 20
<210>4151
<211>20
<212>DNA
<400>4151
gcgcatccga aagacttttc 20
<210>4152
<211>20
<212>DNA
<400>4152
cccctaaaca tacgccgaat 20
<210>4153
<211>20
<212>DNA
<400>4153
ccgagtaagg agatagctac 20
<210>4154
<211>20
<212>DNA
<400>4154
ggccatgaac tgtctggaaa 20
<210>4155
<211>20
<212>DNA
<400>4155
gggaaaatgc cttgaggaag 20
<210>4156
<211>20
<212>DNA
<400>4156
cgttgctctc tcctctgtat 20
<210>4157
<211>20
<212>DNA
<400>4157
cccgaacgac gctgtatacg 20
<210>4158
<211>20
<212>DNA
<400>4158
cccttgcgat agagaatcct 20
<210>4159
<211>20
<212>DNA
<400>4159
cagagattct aggacgatgc 20
<210>4160
<211>20
<212>DNA
<400>4160
cccttgcgat agagaatcct 20

<210>4161
<211>20
<212>DNA
<400>4161
cagagattctc aggacgatgc 20
<210>4162
<211>20
<212>DNA
<400>4162
gccccaggatc tattacgatg 20
<210>4163
<211>20
<212>DNA
<400>4163
cccacaattc cggatagcag 20
<210>4164
<211>20
<212>DNA
<400>4164
ttccagaggg acgatctccg 20
<210>4165
<211>20
<212>DNA
<400>4165
gccgtcctgt ttagtcgaat 20
<210>4166
<211>20
<212>DNA
<400>4166
cacctgggac gctcgattcc 20
<210>4167
<211>20
<212>DNA
<400>4167
ccccttcact agagattgct 20
<210>4168
<211>20
<212>DNA
<400>4168
ttttccggtg gctatcgcc 20
<210>4169
<211>20
<212>DNA
<400>4169
gcttctgaga tttcccactg 20
<210>4170
<211>20
<212>DNA
<400>4170
gcacgagctg atctcatatc 20
<210>4171
<211>20
<212>DNA
<400>4171
ggcgaatgtg atctcctcat 20
<210>4172
<211>20
<212>DNA
<400>4172
ccctaacaca ggacacaact 20
<210>4173
<211>20
<212>DNA
<400>4173

gcgatctcgt tcacttttcc 20
<210>4174
<211>20
<212>DNA
<400>4174
gcttgaaagc ttcgatgttc 20
<210>4175
<211>20
<212>DNA
<400>4175
gatttaggaa acgacggcac 20
<210>4176
<211>20
<212>DNA
<400>4176
ccacgttcca ttttcttccc 20
<210>4177
<211>20
<212>DNA
<400>4177
gcctcacgca cttcttgatt 20
<210>4178
<211>20
<212>DNA
<400>4178
ctcttcgctg atatgcgag 20
<210>4179
<211>20
<212>DNA
<400>4179
caggacgtac tttaagtctg 20
<210>4180
<211>20
<212>DNA
<400>4180
agaagcaaac gaacttcccc 20
<210>4181
<211>20
<212>DNA
<400>4181
ggtggtgttg gaataccatc 20
<210>4182
<211>20
<212>DNA
<400>4182
ggtaggaaat tttggctaag 20
<210>4183
<211>20
<212>DNA
<400>4183
ctataccatg gcctaaactc 20
<210>4184
<211>20
<212>DNA
<400>4184
ggctgttggt tctacagcag 20
<210>4185
<211>20
<212>DNA
<400>4185
gcaggattcc cttccaactt 20
<210>4186
<211>20
<212>DNA

<400>4186
ggaggtccat atggacctat 20
<210>4187
<211>20
<212>DNA
<400>4187
caactgagtg aacagcttgc 20
<210>4188
<211>20
<212>DNA
<400>4188
ggctatccgc tacttcttac 20
<210>4189
<211>20
<212>DNA
<400>4189
ccctccagag ttgcaaaaac 20
<210>4190
<211>20
<212>DNA
<400>4190
gatgcaaagg aacggctctt 20
<210>4191
<211>20
<212>DNA
<400>4191
tatgcctagt gctcgcaatc 20
<210>4192
<211>20
<212>DNA
<400>4192
tgctcgcaat ctccctccaa 20
<210>4193
<211>20
<212>DNA
<400>4193
gtgtcgctgg tgtaggggta 20
<210>4194
<211>20
<212>DNA
<400>4194
ctcaaggacc agacaatcct 20
<210>4195
<211>20
<212>DNA
<400>4195
ctacaggtca ttgtcatctc 20
<210>4196
<211>20
<212>DNA
<400>4196
gcggctcttc gaactacaaa 20
<210>4197
<211>20
<212>DNA
<400>4197
ggcgtgagat aaccatcttg 20
<210>4198
<211>20
<212>DNA
<400>4198
tctggggagc gcaatctctg 20
<210>4199
<211>20

<212>DNA
<400>4199
cgtactccga ttagccctat 20
<210>4200
<211>20
<212>DNA
<400>4200
ccccccacaat tagagttagg 20
<210>4201
<211>20
<212>DNA
<400>4201
gcagcaaaac gaagacaacc 20
<210>4202
<211>20
<212>DNA
<400>4202
ggcagaaaag aggtgcatct 20
<210>4203
<211>20
<212>DNA
<400>4203
gcggaagaca ataatcgctc 20
<210>4204
<211>20
<212>DNA
<400>4204
ggaaggatcc cagctacaaa 20
<210>4205
<211>20
<212>DNA
<400>4205
agaggaaaga cctgtctagc 20
<210>4206
<211>20
<212>DNA
<400>4206
cgtttagctg caaccgtaga 20
<210>4207
<211>20
<212>DNA
<400>4207
cgagtgactt tctcgtctct 20
<210>4208
<211>20
<212>DNA
<400>4208
gcagcaaaac gaagacaacc 20
<210>4209
<211>20
<212>DNA
<400>4209
cgtgcttcgc aaacgttttc 20
<210>4210
<211>20
<212>DNA
<400>4210
ggcttagggg tattaagccg 20
<210>4211
<211>20
<212>DNA
<400>4211
tgggaccata acacctcaat 20
<210>4212

<211>20
<212>DNA
<400>4212
gggaggggtgt ctcattaaat 20
<210>4213
<211>20
<212>DNA
<400>4213
ggacatgcct ccgaagtaat 20
<210>4214
<211>20
<212>DNA
<400>4214
ccatagcatt acgtgctgta 20
<210>4215
<211>20
<212>DNA
<400>4215
cgctataggc attggtcctt 20
<210>4216
<211>20
<212>DNA
<400>4216
gttcctgggg gagttgaagg 20
<210>4217
<211>20
<212>DNA
<400>4217
ccctgatcca aactcgagat 20
<210>4218
<211>20
<212>DNA
<400>4218
gcatacatgg aagaagcctt 20
<210>4219
<211>20
<212>DNA
<400>4219
gctggttgagt gtgtgactgt 20
<210>4220
<211>20
<212>DNA
<400>4220
gagtgtgtgc gtcgtatatc 20
<210>4221
<211>20
<212>DNA
<400>4221
cctcgacttg gagataagac 20
<210>4222
<211>20
<212>DNA
<400>4222
acgcaagaac tggcacctat 20
<210>4223
<211>20
<212>DNA
<400>4223
gagtggggaa aagataggga 20
<210>4224
<211>20
<212>DNA
<400>4224
ccaagtctgt gagtgtcatc 20

<210>4225
<211>20
<212>DNA
<400>4225
cctcagggga atccttttgt 20
<210>4226
<211>20
<212>DNA
<400>4226
gattcttggc gtccaacctt 20
<210>4227
<211>20
<212>DNA
<400>4227
cttggatctc tttcctcctg 20
<210>4228
<211>20
<212>DNA
<400>4228
ggaaagcgtt tcttcctctg 20
<210>4229
<211>20
<212>DNA
<400>4229
ggctatggta cgtagaacac 20
<210>4230
<211>20
<212>DNA
<400>4230
gaatctcggg gtgctttcat 20
<210>4231
<211>20
<212>DNA
<400>4231
ccatctccag gtcgtttaga 20
<210>4232
<211>20
<212>DNA
<400>4232
acaaccagca agccgcgtta 20
<210>4233
<211>20
<212>DNA
<400>4233
tatagagcgt tttctgccgc 20
<210>4234
<211>20
<212>DNA
<400>4234
ggctatggta cgtagaacac 20
<210>4235
<211>20
<212>DNA
<400>4235
gcctcaagca gcaaagtctt 20
<210>4236
<211>20
<212>DNA
<400>4236
agctcggagg cttttctaatt 20
<210>4237
<211>20
<212>DNA
<400>4237

aggggaatag acaagagcct 20
<210>4238
<211>20
<212>DNA
<400>4238
ctacaacaag ttccggagac 20
<210>4239
<211>20
<212>DNA
<400>4239
cctttcttgc tgaggatcca 20
<210>4240
<211>20
<212>DNA
<400>4240
gactgtctct gcaatggtct 20
<210>4241
<211>20
<212>DNA
<400>4241
ctcttctaag tcctcagcag 20
<210>4242
<211>20
<212>DNA
<400>4242
cgggatttac aggacagagc 20
<210>4243
<211>20
<212>DNA
<400>4243
cagccttctg agcttcttgt 20
<210>4244
<211>20
<212>DNA
<400>4244
gtataggagg ttagaatcac 20
<210>4245
<211>20
<212>DNA
<400>4245
aggcgtttgc taagatctgc 20
<210>4246
<211>20
<212>DNA
<400>4246
cccaagaggt ttctctctta 20
<210>4247
<211>20
<212>DNA
<400>4247
caggctggta cccattgtta 20
<210>4248
<211>20
<212>DNA
<400>4248
agcatctcca gcgtttgctt 20
<210>4249
<211>20
<212>DNA
<400>4249
ccacaatagc tacgattggc 20
<210>4250
<211>20
<212>DNA

<400>4250
gacgttgctt ctgacctgtt 20
<210>4251
<211>20
<212>DNA
<400>4251
tcccagaaag gggaagctat 20
<210>4252
<211>20
<212>DNA
<400>4252
ggaacacaag taagcaaacc 20
<210>4253
<211>20
<212>DNA
<400>4253
ggccttgaag cttcatttga 20
<210>4254
<211>20
<212>DNA
<400>4254
ccgtcgagtt cgaatttctc 20
<210>4255
<211>20
<212>DNA
<400>4255
ctgggctcac ttcccactgg 20
<210>4256
<211>20
<212>DNA
<400>4256
gggagttgtg cttgtttag 20
<210>4257
<211>20
<212>DNA
<400>4257
gtcgaggcgc ttacaaatga 20
<210>4258
<211>20
<212>DNA
<400>4258
tatctctcca gaaccctgga 20
<210>4259
<211>20
<212>DNA
<400>4259
cttgagcgat gcgttagtgt 20
<210>4260
<211>20
<212>DNA
<400>4260
cgaagagggt atgtgaatcc 20
<210>4261
<211>20
<212>DNA
<400>4261
gggaagcttc catcgtaga 20
<210>4262
<211>20
<212>DNA
<400>4262
cgatttctgc attgggggtt 20
<210>4263
<211>20

<212>DNA
<400>4263
cgaaaccttg cctactctgt 20
<210>4264
<211>20
<212>DNA
<400>4264
ggcatcgttc cgacatcttt 20
<210>4265
<211>20
<212>DNA
<400>4265
gttggcctgt tgtagagctt 20
<210>4266
<211>20
<212>DNA
<400>4266
gaatccgcaa tggttttggg 20
<210>4267
<211>20
<212>DNA
<400>4267
catagtttag caggggggaa 20
<210>4268
<211>20
<212>DNA
<400>4268
gtaattcgta cggttcctgg 20
<210>4269
<211>20
<212>DNA
<400>4269
ggattgcagg gttctttgag 20
<210>4270
<211>20
<212>DNA
<400>4270
gcaagttcag gaacgactcc 20
<210>4271
<211>20
<212>DNA
<400>4271
gcgttggtgcc atctcttggt 20
<210>4272
<211>20
<212>DNA
<400>4272
ccgtccgagg aaagagagta 20
<210>4273
<211>20
<212>DNA
<400>4273
cggactccta gattttcttg 20
<210>4274
<211>20
<212>DNA
<400>4274
cagcgaagaa acggagcata 20
<210>4275
<211>20
<212>DNA
<400>4275
gctccataaaa gcgctgtctt 20
<210>4276

<211>20
<212>DNA
<400>4276
gttgggcaat agaaagggtcc 20
<210>4277
<211>20
<212>DNA
<400>4277
gttgctctag ggtaatcacc 20
<210>4278
<211>20
<212>DNA
<400>4278
ggtcggagtc cgtggtggat 20
<210>4279
<211>20
<212>DNA
<400>4279
cttgaagtag acctcagctc 20
<210>4280
<211>20
<212>DNA
<400>4280
cttgaagtag acctcagctc 20
<210>4281
<211>20
<212>DNA
<400>4281
atccatgaga tccctcttcg 20
<210>4282
<211>20
<212>DNA
<400>4282
cgagcatgga gagacaagaa 20
<210>4283
<211>20
<212>DNA
<400>4283
gggaggttca caagatcaag 20
<210>4284
<211>20
<212>DNA
<400>4284
ccgactagag caagatttcg 20
<210>4285
<211>20
<212>DNA
<400>4285
gaaggcgagg gttcttttag 20
<210>4286
<211>20
<212>DNA
<400>4286
accttacgtg ctctggggat 20
<210>4287
<211>20
<212>DNA
<400>4287
ttgtgaagat ttggtagccc 20
<210>4288
<211>20
<212>DNA
<400>4288
gaagcaagaa cattatgggg 20

<210>4289
<211>20
<212>DNA
<400>4289
gcgtgtggag tatcatcttc 20
<210>4290
<211>20
<212>DNA
<400>4290
ggagttctct tagacagact 20
<210>4291
<211>20
<212>DNA
<400>4291
ggtgggtaga gttttagag 20
<210>4292
<211>20
<212>DNA
<400>4292
gtgtgagtag tagtgtggag 20
<210>4293
<211>20
<212>DNA
<400>4293
tatttacgaa cccacgagg 20
<210>4294
<211>20
<212>DNA
<400>4294
gctccgaacc agatgaatgt 20
<210>4295
<211>20
<212>DNA
<400>4295
gaccaggtgg atgagtagtt 20
<210>4296
<211>20
<212>DNA
<400>4296
tcctgccata gcagtgagga 20
<210>4297
<211>20
<212>DNA
<400>4297
gctgagcgtc ccataagttt 20
<210>4298
<211>20
<212>DNA
<400>4298
ggctaaagtc aatgggattc 20
<210>4299
<211>20
<212>DNA
<400>4299
agtgcaccag ttgtggcttg 20
<210>4300
<211>20
<212>DNA
<400>4300
ggttgatcga cgctctcttt 20
<210>4301
<211>20
<212>DNA
<400>4301

ccaatgtaca ggcctcttct 20
<210>4302
<211>20
<212>DNA
<400>4302
ggggctgttt agttatgagg 20
<210>4303
<211>20
<212>DNA
<400>4303
cagagaagac ctttggtgct 20
<210>4304
<211>20
<212>DNA
<400>4304
ccaatgtaca ggcctcttct 20
<210>4305
<211>20
<212>DNA
<400>4305
ctccagttca gaggtgctat 20
<210>4306
<211>20
<212>DNA
<400>4306
ggctgtggag gattgtattg 20
<210>4307
<211>20
<212>DNA
<400>4307
agaaagtccg gcacgtcttt 20
<210>4308
<211>20
<212>DNA
<400>4308
aggaattccc agattagagc 20
<210>4309
<211>20
<212>DNA
<400>4309
ccgaagttat aggagggaac 20
<210>4310
<211>20
<212>DNA
<400>4310
gcacgtattc gcaagactct 20
<210>4311
<211>20
<212>DNA
<400>4311
cttggaaatc cttcccagtc 20
<210>4312
<211>20
<212>DNA
<400>4312
ggggatcttc ttctgtttgg 20
<210>4313
<211>20
<212>DNA
<400>4313
cgtcacaaag attgctgacc 20
<210>4314
<211>20
<212>DNA

<400>4314
tgagtgcgat ttctgagcgt 20
<210>4315
<211>20
<212>DNA
<400>4315
aggcgctggg aggtacaata 20
<210>4316
<211>20
<212>DNA
<400>4316
cagagaaagt ctggaatcca 20
<210>4317
<211>20
<212>DNA
<400>4317
gaaccatgcg ccttcacag 20
<210>4318
<211>20
<212>DNA
<400>4318
gccgatccat cctagagata 20
<210>4319
<211>20
<212>DNA
<400>4319
gaatatcggc gttggagtag 20
<210>4320
<211>20
<212>DNA
<400>4320
gaccctagct tgggatttct 20
<210>4321
<211>20
<212>DNA
<400>4321
gctacgtata ggtacttcgt 20
<210>4322
<211>20
<212>DNA
<400>4322
gaatatcggc gttggagtag 20
<210>4323
<211>20
<212>DNA
<400>4323
ccagactttt gcatgttgcg 20
<210>4324
<211>20
<212>DNA
<400>4324
cgctattgtg ggagggaaga 20
<210>4325
<211>20
<212>DNA
<400>4325
ccgtaggcgt ggattaattg 20
<210>4326
<211>20
<212>DNA
<400>4326
ggagaactgc ttgtgccata 20
<210>4327
<211>20

<212>DNA
 <400>4327
 cgggtttttg ggggaactgct 20
 <210>4328
 <211>20
 <212>DNA
 <400>4328
 ggttcgttaa tccctcgaga 20
 <210>4329
 <211>20
 <212>DNA
 <400>4329
 tagggtagac gattctaggc 20
 <210>4330
 <211>20
 <212>DNA
 <400>4330
 cagaatggag cgaatgatcg 20
 <210>4331
 <211>20
 <212>DNA
 <400>4331
 gctgtagtcg gagactactt 20
 <210>4332
 <211>20
 <212>DNA
 <400>4332
 ggttgtgggg ttggtgtttg 20
 <210>4333
 <211>20
 <212>DNA
 <400>4333
 gcagctcaag cattgctatg 20
 <210>4334
 <211>20
 <212>DNA
 <400>4334
 ggctgccatt tgctgttgaa 20
 <210>4335
 <211>20
 <212>DNA
 <400>4335
 ccaagaaatg cagggaggat 20
 <210>4336
 <211>20
 <212>DNA
 <400>4336
 cttacaaagt tggctgaggg 20
 <210>4337
 <211>20
 <212>DNA
 <400>4337
 gttaggcacg taagcttctc 20
 <210>4338
 <211>20
 <212>DNA
 <400>4338
 ccttcttgtt ctgcttgtgc 20
 <210>4339
 <211>20
 <212>DNA
 <400>4339
 ctacatagaa tctcaggtgc 20
 <210>4340

```

<211>20
<212>DNA
<400>4340
ccaagaaatg cagggaggat      20
<210>4341
<211>20
<212>DNA
<400>4341
ctggatcctt caatgagacc      20
<210>4342
<211>20
<212>DNA
<400>4342
cgagcagaga gtatacagtc      20
<210>4343
<211>20
<212>DNA
<400>4343
gacgttgccct atatgcagca      20
<210>4344
<211>20
<212>DNA
<400>4344
cttcccaaga cagagtgtgt      20
<210>4345
<211>20
<212>DNA
<400>4345
ctagtctcca aatcgcggtt      20
<210>4346
<211>20
<212>DNA
<400>4346
gttaggcacg taagcttctc      20
<210>4347
<211>20
<212>DNA
<400>4347
tagtgtcagc ggcgctgttt      20
<210>4348
<211>20
<212>DNA
<400>4348
caggtgctag tacctgagta      20
<210>4349
<211>20
<212>DNA
<400>4349
gcagatgtga ggcctttctt      20
<210>4350
<211>20
<212>DNA
<400>4350
gcagctcagt gcttgtcttt      20
<210>4351
<211>20
<212>DNA
<400>4351
caaggactat gtttttgggc      20
<210>4352
<211>20
<212>DNA
<400>4352
gataccttgc tcaagagtgt      20

```

<210>4353
<211>20
<212>DNA
<400>4353
ggagtcgaag ctaaactctgg 20
<210>4354
<211>20
<212>DNA
<400>4354
cggtcaagag attgggatct 20
<210>4355
<211>20
<212>DNA
<400>4355
cgttaagccg ttgacgttct 20
<210>4356
<211>20
<212>DNA
<400>4356
gcgtgcgggc aaaactccaa 20
<210>4357
<211>20
<212>DNA
<400>4357
gggggtccatt tctaggggaat 20
<210>4358
<211>20
<212>DNA
<400>4358
cgttaagccg ttgacgttct 20
<210>4359
<211>20
<212>DNA
<400>4359
gccaggggaat ctgtttttcc 20
<210>4360
<211>20
<212>DNA
<400>4360
cttcctcttg cagagatgag 20
<210>4361
<211>20
<212>DNA
<400>4361
gttgccatag tctcaatccc 20
<210>4362
<211>20
<212>DNA
<400>4362
agtgaggtga tatagagcgg 20
<210>4363
<211>20
<212>DNA
<400>4363
gaccatcttc tcctagtcct 20
<210>4364
<211>20
<212>DNA
<400>4364
cataacttct atcccccccc 20
<210>4365
<211>20
<212>DNA
<400>4365

cgacatgatg atgacagggt 20
 <210>4366
 <211>20
 <212>DNA
 <400>4366
 gttgccatag tctcaatccc 20
 <210>4367
 <211>20
 <212>DNA
 <400>4367
 ttcagtgggtg cgcagtaact 20
 <210>4368
 <211>20
 <212>DNA
 <400>4368
 gttctcgacc atctcagcat 20
 <210>4369
 <211>20
 <212>DNA
 <400>4369
 ccgcctcaca atctacaatc 20
 <210>4370
 <211>20
 <212>DNA
 <400>4370
 taggaccgac attaggtgcc 20
 <210>4371
 <211>20
 <212>DNA
 <400>4371
 aggaaactct tcttccttgc 20
 <210>4372
 <211>20
 <212>DNA
 <400>4372
 gctgagagcc cttagctaaa 20
 <210>4373
 <211>20
 <212>DNA
 <400>4373
 gctgtagttt gtgcagttgt 20
 <210>4374
 <211>20
 <212>DNA
 <400>4374
 gcaataggca agctgtagtt 20
 <210>4375
 <211>20
 <212>DNA
 <400>4375
 agaggggggaa gggttagaat 20
 <210>4376
 <211>20
 <212>DNA
 <400>4376
 ccgcctcaca atctacaatc 20
 <210>4377
 <211>20
 <212>DNA
 <400>4377
 ggcttgaacg gggaaatagt 20
 <210>4378
 <211>20
 <212>DNA

<400>4378
 gacagaaggc gaacatcact 20
 <210>4379
 <211>20
 <212>DNA
 <400>4379
 cctttctcgga ataatcgctc 20
 <210>4380
 <211>20
 <212>DNA
 <400>4380
 ggaaccgcaa ttcacggatt 20
 <210>4381
 <211>20
 <212>DNA
 <400>4381
 catagcttcc ctaagctgtc 20
 <210>4382
 <211>20
 <212>DNA
 <400>4382
 tctcctgctt atcaagtggg 20
 <210>4383
 <211>20
 <212>DNA
 <400>4383
 ctccccatac atagggaaag 20
 <210>4384
 <211>20
 <212>DNA
 <400>4384
 catggaccaa taacaagtag 20
 <210>4385
 <211>20
 <212>DNA
 <400>4385
 agccccagat ggtgttcata 20
 <210>4386
 <211>20
 <212>DNA
 <400>4386
 caggcttggc tttgcagttt 20
 <210>4387
 <211>20
 <212>DNA
 <400>4387
 ccagaactcg cttaggaaag 20
 <210>4388
 <211>20
 <212>DNA
 <400>4388
 gggcttccat aacagctcat 20
 <210>4389
 <211>20
 <212>DNA
 <400>4389
 ctagggaagg agtcttatcc 20
 <210>4390
 <211>20
 <212>DNA
 <400>4390
 caagggcagg taattgctac 20
 <210>4391
 <211>20


```

<212>DNA
<400>4391
ggggacatca tcacgaagtt      20
<210>4392
<211>20
<212>DNA
<400>4392
ctggagctaa gaaaggccaa      20
<210>4393
<211>20
<212>DNA
<400>4393
ggggatacag gagtttttag      20
<210>4394
<211>20
<212>DNA
<400>4394
ctagggaagg agtccttatcc      20
<210>4395
<211>20
<212>DNA
<400>4395
gtcgaccctt atgacacctga      20
<210>4396
<211>20
<212>DNA
<400>4396
gtggagtggg tataggaacg      20
<210>4397
<211>20
<212>DNA
<400>4397
ggttggaagt catgcatcca      20
<210>4398
<211>20
<212>DNA
<400>4398
cgttaggggg aagaactgta      20
<210>4399
<211>20
<212>DNA
<400>4399
ccatcactca cttcatcagg      20
<210>4400
<211>20
<212>DNA
<400>4400
aaaggactca tccatggcaa      20
<210>4401
<211>20
<212>DNA
<400>4401
gggagtcaat gtaccttgga      20
<210>4402
<211>20
<212>DNA
<400>4402
gggagcttct tttggtagca      20
<210>4403
<211>20
<212>DNA
<400>4403
ctgtaggggg aaatactgcg      20
<210>4404

```

<211>20
<212>DNA
<400>4404
cagcacttac tattggtcag 20
<210>4405
<211>20
<212>DNA
<400>4405
cttacggtta ttcacactca 20
<210>4406
<211>20
<212>DNA
<400>4406
cggagataat tctgccactc 20
<210>4407
<211>20
<212>DNA
<400>4407
ggagggagga taaatgtcac 20
<210>4408
<211>20
<212>DNA
<400>4408
gtacactggg gacctcaata 20
<210>4409
<211>20
<212>DNA
<400>4409
ttgctacccc ccctcatgat 20
<210>4410
<211>20
<212>DNA
<400>4410
gttgcccttg cttacgttga 20
<210>4411
<211>20
<212>DNA
<400>4411
gagggtattc aacgataggg 20
<210>4412
<211>20
<212>DNA
<400>4412
gggcaacata gtggacttga 20
<210>4413
<211>20
<212>DNA
<400>4413
tttgggggtg tcgcatagtg 20
<210>4414
<211>20
<212>DNA
<400>4414
atggaacaat gttgtgcggg 20
<210>4415
<211>20
<212>DNA
<400>4415
ctttcatcca cggaggattt 20
<210>4416
<211>20
<212>DNA
<400>4416
ggcgccttcc tcaataacaa 20

<210>4417
 <211>20
 <212>DNA
 <400>4417
 ccttgcttga gagcatggat 20
 <210>4418
 <211>20
 <212>DNA
 <400>4418
 cccccacttc tttttcttca 20
 <210>4419
 <211>20
 <212>DNA
 <400>4419
 gcagagacta ggcaactcat 20
 <210>4420
 <211>20
 <212>DNA
 <400>4420
 gctttcatcc acggaggatt 20
 <210>4421
 <211>20
 <212>DNA
 <400>4421
 ggtcgaaccc gcaacttccg 20
 <210>4422
 <211>20
 <212>DNA
 <400>4422
 gcagagacta ggcaactcat 20
 <210>4423
 <211>20
 <212>DNA
 <400>4423
 gctgagggat cttctctatg 20
 <210>4424
 <211>20
 <212>DNA
 <400>4424
 tcccgcaaatt ggacacgaca 20
 <210>4425
 <211>20
 <212>DNA
 <400>4425
 gtgggtatgg taatagctgc 20
 <210>4426
 <211>20
 <212>DNA
 <400>4426
 tgtccctaga gagacccctt 20
 <210>4427
 <211>20
 <212>DNA
 <400>4427
 ggtaacagtgc catgcgaaag 20
 <210>4428
 <211>20
 <212>DNA
 <400>4428
 cggtgaaaag aaagccgttg 20
 <210>4429
 <211>20
 <212>DNA
 <400>4429

tggtataacca tcttctcccc 20
<210>4430
<211>20
<212>DNA
<400>4430
ctgatgcaca agaactaccc 20
<210>4431
<211>20
<212>DNA
<400>4431
accctgccaa tcccccaaca 20
<210>4432
<211>20
<212>DNA
<400>4432
gattgagaag ggcattgggt 20
<210>4433
<211>20
<212>DNA
<400>4433
cacagaagct cctaagagac 20
<210>4434
<211>20
<212>DNA
<400>4434
cattcggtgt agatgtgcct 20
<210>4435
<211>20
<212>DNA
<400>4435
agcaccgcaa tcctagattc 20
<210>4436
<211>20
<212>DNA
<400>4436
ctttcttctc gggctgagaa 20
<210>4437
<211>20
<212>DNA
<400>4437
ttcaagtggc gtagtcaata 20
<210>4438
<211>20
<212>DNA
<400>4438
ctttcttctc gggctgagaa 20
<210>4439
<211>20
<212>DNA
<400>4439
ttcaagtggc gtagtcaata 20
<210>4440
<211>20
<212>DNA
<400>4440
gtcacatgcc ttttogaagc 20
<210>4441
<211>20
<212>DNA
<400>4441
gctcctagag ctatatcgag 20
<210>4442
<211>20
<212>DNA

<400>4442
gcggttttgt gcggattcta 20
<210>4443
<211>20
<212>DNA
<400>4443
gcaacttggg ttatgcacct 20
<210>4444
<211>20
<212>DNA
<400>4444
tttgtcttca agtggcgtag 20
<210>4445
<211>20
<212>DNA
<400>4445
gacctacacc tttccttcct 20
<210>4446
<211>20
<212>DNA
<400>4446
gctcctagag ctatatcgag 20
<210>4447
<211>20
<212>DNA
<400>4447
caccaaactgt ggtgttgtga 20
<210>4448
<211>20
<212>DNA
<400>4448
gccgaccttt gttctaaggt 20
<210>4449
<211>20
<212>DNA
<400>4449
gctctacaag ttcaccgatg 20
<210>4450
<211>20
<212>DNA
<400>4450
ctgttacgga tcacgacagt 20
<210>4451
<211>20
<212>DNA
<400>4451
ctcgtcttac ccatagtgt 20
<210>4452
<211>20
<212>DNA
<400>4452
ggtataaagg tcttggagag 20
<210>4453
<211>20
<212>DNA
<400>4453
gtccttcattg ctggaggaaa 20
<210>4454
<211>20
<212>DNA
<400>4454
gggatgtctc aagctatagg 20
<210>4455
<211>20

<212>DNA
<400>4455
ggggcgctcgt gtattaaagt 20
<210>4456
<211>20
<212>DNA
<400>4456
acagccccta aaaagggatt 20
<210>4457
<211>20
<212>DNA
<400>4457
tggttcctctc actatcggag 20
<210>4458
<211>20
<212>DNA
<400>4458
cagcaaacct ttctccaaag 20
<210>4459
<211>20
<212>DNA
<400>4459
catgacgcct atccaggaaa 20
<210>4460
<211>20
<212>DNA
<400>4460
ctgaaagcta tccacagctc 20
<210>4461
<211>20
<212>DNA
<400>4461
ccagggattt gtcaaggaac 20
<210>4462
<211>20
<212>DNA
<400>4462
gcagaagaca gggaagaagt 20
<210>4463
<211>20
<212>DNA
<400>4463
ggattgctga gatagcacca 20
<210>4464
<211>20
<212>DNA
<400>4464
cgtcaccaag aagttcgtct 20
<210>4465
<211>20
<212>DNA
<400>4465
ggaagaagat ttccccaaga 20
<210>4466
<211>20
<212>DNA
<400>4466
gaggcttgaa agaagcaagc 20
<210>4467
<211>20
<212>DNA
<400>4467
ctcctacttt cagggttggtg 20
<210>4468

<211>20
 <212>DNA
 <400>4468
 gctctactgg aatcagagga 20
 <210>4469
 <211>20
 <212>DNA
 <400>4469
 aaggcgcat tagaagcagg 20
 <210>4470
 <211>20
 <212>DNA
 <400>4470
 gaagctccag gagaagagat 20
 <210>4471
 <211>20
 <212>DNA
 <400>4471
 cccacacaaa gaccttgaaa 20
 <210>4472
 <211>20
 <212>DNA
 <400>4472
 gagtagggaa gaagactctc 20
 <210>4473
 <211>20
 <212>DNA
 <400>4473
 ccttctcatt gtctcctgtg 20
 <210>4474
 <211>20
 <212>DNA
 <400>4474
 gagaatccca agtgtcagac 20
 <210>4475
 <211>20
 <212>DNA
 <400>4475
 cctggcctttt ggtgactcta 20
 <210>4476
 <211>20
 <212>DNA
 <400>4476
 gggagcttct ctcacagcta 20
 <210>4477
 <211>20
 <212>DNA
 <400>4477
 gaagccacaa tcgatgaagc 20
 <210>4478
 <211>20
 <212>DNA
 <400>4478
 gtgtgttttag gtaagcttgc 20
 <210>4479
 <211>20
 <212>DNA
 <400>4479
 gtgggtaaga acaccttcta 20
 <210>4480
 <211>20
 <212>DNA
 <400>4480
 gcagcctttt ctaaagggga 20

<210>4481
<211>20
<212>DNA
<400>4481
ctctagccag gttgagaaag 20
<210>4482
<211>20
<212>DNA
<400>4482
gtaatggtgg agccgagagc 20
<210>4483
<211>20
<212>DNA
<400>4483
ctccaggcaa acgggtaaata 20
<210>4484
<211>20
<212>DNA
<400>4484
ccctatagga gctttcttgg 20
<210>4485
<211>20
<212>DNA
<400>4485
gcaaccgagg ttgaagctat 20
<210>4486
<211>20
<212>DNA
<400>4486
gccatagact aaagctgcgt 20
<210>4487
<211>20
<212>DNA
<400>4487
gggatgaaag aacgcaaagg 20
<210>4488
<211>20
<212>DNA
<400>4488
ctagttcggg tacctgttgg 20
<210>4489
<211>20
<212>DNA
<400>4489
ctctgtagca atcgctagca 20
<210>4490
<211>20
<212>DNA
<400>4490
gctcctccta cttgaaggat 20
<210>4491
<211>20
<212>DNA
<400>4491
ctgggggtgt taagatgagc 20
<210>4492
<211>20
<212>DNA
<400>4492
gagagtgccg taacaaccta 20
<210>4493
<211>20
<212>DNA
<400>4493

ccaatcatag cctcagcata 20
<210>4494
<211>20
<212>DNA
<400>4494
gcctccacaa tggtttaaga 20
<210>4495
<211>20
<212>DNA
<400>4495
gtcttggtac ttttgctcag 20
<210>4496
<211>20
<212>DNA
<400>4496
ggagtggatc caaaagaagt 20
<210>4497
<211>20
<212>DNA
<400>4497
gtaggtatgg gacaagacct 20
<210>4498
<211>20
<212>DNA
<400>4498
cctcgcagtt atcgagctat 20
<210>4499
<211>20
<212>DNA
<400>4499
ggcaggcatt caggaagagg 20
<210>4500
<211>20
<212>DNA
<400>4500
gtgtcacacg tggtaggaaa 20
<210>4501
<211>20
<212>DNA
<400>4501
ctgtcccaag agatgagttc 20
<210>4502
<211>20
<212>DNA
<400>4502
caggcattca ggaagaggat 20
<210>4503
<211>20
<212>DNA
<400>4503
ccaccacatg gccttcttta 20
<210>4504
<211>20
<212>DNA
<400>4504
ggggcctaaa ttaagggttag 20
<210>4505
<211>20
<212>DNA
<400>4505
cgaccctcga tcaatatcca 20
<210>4506
<211>20
<212>DNA

<400>4506
gactacgctc actagcaaca 20
<210>4507
<211>20
<212>DNA
<400>4507
gagacccttc acttacctca 20
<210>4508
<211>20
<212>DNA
<400>4508
tttcccgtcc taacaccggg 20
<210>4509
<211>20
<212>DNA
<400>4509
ctgcagcaga gacaaatcct 20
<210>4510
<211>20
<212>DNA
<400>4510
ccgataggct ttccatgtaa 20
<210>4511
<211>20
<212>DNA
<400>4511
ggactcaagc gtagtggaaa 20
<210>4512
<211>20
<212>DNA
<400>4512
gcatgttgca ttgcctgaga 20
<210>4513
<211>20
<212>DNA
<400>4513
ggattcgata gacggtgtca 20
<210>4514
<211>20
<212>DNA
<400>4514
gctttaaact ctggcggaga 20
<210>4515
<211>20
<212>DNA
<400>4515
cctcttcagt cagaacctct 20
<210>4516
<211>20
<212>DNA
<400>4516
cccgtaaagg tctaagatcc 20
<210>4517
<211>20
<212>DNA
<400>4517
cattaggcaa agtggcctgt 20
<210>4518
<211>20
<212>DNA
<400>4518
tgacaatgcg gctcctattc 20
<210>4519
<211>20

<212>DNA
 <400>4519
 ccgtcaagaa caagagcttg 20
 <210>4520
 <211>20
 <212>DNA
 <400>4520
 gccccaacgt tttttggcta 20
 <210>4521
 <211>20
 <212>DNA
 <400>4521
 gtacatcgcc tactgcatga 20
 <210>4522
 <211>20
 <212>DNA
 <400>4522
 caataggggt gcctataacg 20
 <210>4523
 <211>20
 <212>DNA
 <400>4523
 gttggagaaa tagtagaccc 20
 <210>4524
 <211>20
 <212>DNA
 <400>4524
 cgctgcccac gaaaatgtga 20
 <210>4525
 <211>20
 <212>DNA
 <400>4525
 tacggctacg gtatacgcta 20
 <210>4526
 <211>20
 <212>DNA
 <400>4526
 tgaggcgtag acctgctgcc 20
 <210>4527
 <211>20
 <212>DNA
 <400>4527
 gatgataagc gccggtcttt 20
 <210>4528
 <211>20
 <212>DNA
 <400>4528
 gccttgtgag atactgatgg 20
 <210>4529
 <211>20
 <212>DNA
 <400>4529
 ggggaacatg atggcgattt 20
 <210>4530
 <211>20
 <212>DNA
 <400>4530
 gccatgttgt tctcctgagt 20
 <210>4531
 <211>20
 <212>DNA
 <400>4531
 gtccagcagt ggatcactaa 20
 <210>4532

<211>20
<212>DNA
<400>4532
cgtcaggtag ccatgtactt 20
<210>4533
<211>20
<212>DNA
<400>4533
gttacgggtt cttggggaat 20
<210>4534
<211>20
<212>DNA
<400>4534
ggggaacatg atggcgattt 20
<210>4535
<211>20
<212>DNA
<400>4535
ggggaatcctt ggagctttgt 20
<210>4536
<211>20
<212>DNA
<400>4536
gggaaagttaa tagcagagga 20
<210>4537
<211>20
<212>DNA
<400>4537
caactagaga agctgcgggg 20
<210>4538
<211>20
<212>DNA
<400>4538
tggtctttcg agccatggtc 20
<210>4539
<211>20
<212>DNA
<400>4539
gcatagacgc taagtgttgt 20
<210>4540
<211>20
<212>DNA
<400>4540
gggatgctaa tccccaaaga 20
<210>4541
<211>20
<212>DNA
<400>4541
gctgctcaag aaccaagtgc 20
<210>4542
<211>20
<212>DNA
<400>4542
gctccctatg ccagttccta 20
<210>4543
<211>20
<212>DNA
<400>4543
cgccaggctg tatttcgtta 20
<210>4544
<211>20
<212>DNA
<400>4544
tgcgggggtg ttctttgcta 20

<210>4545
<211>20
<212>DNA
<400>4545
caatattgcg acgttcaacg 20
<210>4546
<211>20
<212>DNA
<400>4546
gggtcttggt ttcttagctc 20
<210>4547
<211>20
<212>DNA
<400>4547
cagcagggaa catagcttca 20
<210>4548
<211>20
<212>DNA
<400>4548
gttcgcgtca tctcttaagg 20
<210>4549
<211>20
<212>DNA
<400>4549
cgatcacgaa agtcggtaag 20
<210>4550
<211>20
<212>DNA
<400>4550
cagtagcgta gtctgcatca 20
<210>4551
<211>20
<212>DNA
<400>4551
cccaagcttc tggcaataga 20
<210>4552
<211>20
<212>DNA
<400>4552
gatgatgaga acgacgaacg 20
<210>4553
<211>20
<212>DNA
<400>4553
cggcagtaaa cgaatgtctg 20
<210>4554
<211>20
<212>DNA
<400>4554
gcgagtcata attccttcag 20
<210>4555
<211>20
<212>DNA
<400>4555
cgaatcctag agaacctcct 20
<210>4556
<211>20
<212>DNA
<400>4556
gcgataaaac cagcagagac 20
<210>4557
<211>20
<212>DNA
<400>4557

gggctttatt cgtgctgaag 20
<210>4558
<211>20
<212>DNA
<400>4558
tacggccaat caacatgacc 20
<210>4559
<211>20
<212>DNA
<400>4559
ccgtttttga ccatgaagcc 20
<210>4560
<211>20
<212>DNA
<400>4560
cacctaacca gtctatggga 20
<210>4561
<211>20
<212>DNA
<400>4561
ggtagggaaa acttcaatcg 20
<210>4562
<211>20
<212>DNA
<400>4562
gctgcgtatg acactttagg 20
<210>4563
<211>20
<212>DNA
<400>4563
ccgtgtcttt aaactcctgc 20
<210>4564
<211>20
<212>DNA
<400>4564
gggaaatcgg tttctctctc 20
<210>4565
<211>20
<212>DNA
<400>4565
agtcaacgat aggcgaggc 20
<210>4566
<211>20
<212>DNA
<400>4566
gaagcccaaa cgttttggtc 20
<210>4567
<211>20
<212>DNA
<400>4567
cgtcaaaccg ccaacaatgt 20
<210>4568
<211>20
<212>DNA
<400>4568
cagctgcaaa gcacttgga 20
<210>4569
<211>20
<212>DNA
<400>4569
cctatgagcg acaacgtatc 20
<210>4570
<211>20
<212>DNA

<400>4570
 ccagcttctc cttttttccg 20
 <210>4571
 <211>20
 <212>DNA
 <400>4571
 cgaggggaaga cttgcaacat 20
 <210>4572
 <211>20
 <212>DNA
 <400>4572
 ggagtttggga ttccctcagc 20
 <210>4573
 <211>20
 <212>DNA
 <400>4573
 cgtcttgagg tataatccct 20
 <210>4574
 <211>20
 <212>DNA
 <400>4574
 ccatttacag agagagcagc 20
 <210>4575
 <211>20
 <212>DNA
 <400>4575
 ggggaagagg ttttcttaga 20
 <210>4576
 <211>20
 <212>DNA
 <400>4576
 ggactcgtat cttcaccagt 20
 <210>4577
 <211>20
 <212>DNA
 <400>4577
 ggacttacgg gagcaaaaac 20
 <210>4578
 <211>20
 <212>DNA
 <400>4578
 cctgtaagtg ggcactttct 20
 <210>4579
 <211>20
 <212>DNA
 <400>4579
 ggtgagtagc aaaatggctg 20
 <210>4580
 <211>20
 <212>DNA
 <400>4580
 gaggttatca ggagcttgag 20
 <210>4581
 <211>20
 <212>DNA
 <400>4581
 ctctgttggga tcttgggttc 20
 <210>4582
 <211>20
 <212>DNA
 <400>4582
 cgcattgtcct cattgcattg 20
 <210>4583
 <211>20

<212>DNA
<400>4583
ggagagtgtt ttccctaagg 20
<210>4584
<211>20
<212>DNA
<400>4584
gttgcgatcat gtgcatttag 20
<210>4585
<211>20
<212>DNA
<400>4585
gcgttcagga tctacaggaa 20
<210>4586
<211>20
<212>DNA
<400>4586
ggaacctgaa gccgttgta 20
<210>4587
<211>20
<212>DNA
<400>4587
gctttggctc aggagattca 20
<210>4588
<211>20
<212>DNA
<400>4588
agacagtcgg atccgagtga 20
<210>4589
<211>20
<212>DNA
<400>4589
ctgcgcattt tgcacaacg 20
<210>4590
<211>20
<212>DNA
<400>4590
cgtggatgct aggatcctga 20
<210>4591
<211>20
<212>DNA
<400>4591
cgttttgact gggactgaga 20
<210>4592
<211>20
<212>DNA
<400>4592
gctcggttga ttatcgagag 20
<210>4593
<211>20
<212>DNA
<400>4593
ctccagtaag aacatagcgg 20
<210>4594
<211>20
<212>DNA
<400>4594
gggcatgact ttgattcctc 20
<210>4595
<211>20
<212>DNA
<400>4595
gggaaggtgg tctttctcaa 20
<210>4596


```

<211>20
<212>DNA
<400>4596
gctcatttcg ggatacaacg      20
<210>4597
<211>20
<212>DNA
<400>4597
cttcgcatg agggccaacg      20
<210>4598
<211>20
<212>DNA
<400>4598
ccttcacg agcacatctt      20
<210>4599
<211>20
<212>DNA
<400>4599
ctagaacg agcaataggt      20
<210>4600
<211>20
<212>DNA
<400>4600
cgaaggtgat ggtatctgtg      20
<210>4601
<211>20
<212>DNA
<400>4601
gggaacgtgc tcgattatcg      20
<210>4602
<211>20
<212>DNA
<400>4602
agactgtgtt tctgcccttc      20
<210>4603
<211>20
<212>DNA
<400>4603
cctcgctcctt ggattgatgt      20
<210>4604
<211>20
<212>DNA
<400>4604
ccccaattcc agatggaagg      20
<210>4605
<211>20
<212>DNA
<400>4605
tccctacctt cgtaatgagc      20
<210>4606
<211>20
<212>DNA
<400>4606
ggtaagaagc tgtcgtccta      20
<210>4607
<211>20
<212>DNA
<400>4607
gctgtcttgg ctttcagcat      20
<210>4608
<211>20
<212>DNA
<400>4608
ctgtgggtat tgtgcagggt      20

```

<210>4609
<211>20
<212>DNA
<400>4609
ctcctagggga tggatatggat 20
<210>4610
<211>20
<212>DNA
<400>4610
gagcgaatttc ctagtatccg 20
<210>4611
<211>20
<212>DNA
<400>4611
gctatttcct gttcaggtgc 20
<210>4612
<211>20
<212>DNA
<400>4612
gatgatgtac atcgtgggta 20
<210>4613
<211>20
<212>DNA
<400>4613
ggctgcgac gtcttttgtg 20
<210>4614
<211>20
<212>DNA
<400>4614
cagattttag aatggcgggg 20
<210>4615
<211>20
<212>DNA
<400>4615
gggtggctct tgaatgtcaa 20
<210>4616
<211>20
<212>DNA
<400>4616
acaaaccctg aagctctctc 20
<210>4617
<211>20
<212>DNA
<400>4617
cctctcagga tctttttgtt 20
<210>4618
<211>20
<212>DNA
<400>4618
ggatgagttg ttttcagcga 20
<210>4619
<211>20
<212>DNA
<400>4619
gccatgaaac ccacctttta 20
<210>4620
<211>20
<212>DNA
<400>4620
ggtctatctc cagaagctca 20
<210>4621
<211>20
<212>DNA
<400>4621

gagcgcaatt ttccaaaagg 20
 <210>4622
 <211>20
 <212>DNA
 <400>4622
 cctctcagga tctttttgtt 20
 <210>4623
 <211>20
 <212>DNA
 <400>4623
 gaagttcccc atgaactcac 20
 <210>4624
 <211>20
 <212>DNA
 <400>4624
 gccacaagaa agagcgcaat 20
 <210>4625
 <211>20
 <212>DNA
 <400>4625
 cagtgcctacg actagcgtta 20
 <210>4626
 <211>20
 <212>DNA
 <400>4626
 gagtcgggca attgtcctaa 20
 <210>4627
 <211>20
 <212>DNA
 <400>4627
 gatccaactt cagagtgcaa 20
 <210>4628
 <211>20
 <212>DNA
 <400>4628
 ctaggctcat caatttgcgt 20
 <210>4629
 <211>20
 <212>DNA
 <400>4629
 tgcttgggat tggctgtgtt 20
 <210>4630
 <211>20
 <212>DNA
 <400>4630
 cttgggggaa tacttgttct 20
 <210>4631
 <211>20
 <212>DNA
 <400>4631
 gggatacagt acagctaagg 20
 <210>4632
 <211>20
 <212>DNA
 <400>4632
 gctacgagag ggagtagaat 20
 <210>4633
 <211>20
 <212>DNA
 <400>4633
 gctctcttga aagcaagtgc 20
 <210>4634
 <211>20
 <212>DNA

WO 99/27105

```

<400>4634
cagtacctag gttccttaga    20
<210>4635
<211>20
<212>DNA
<400>4635
cccgtgatca atatgcgcta    20
<210>4636
<211>20
<212>DNA
<400>4636
ccctctcttt ttgaacgtcg    20
<210>4637
<211>20
<212>DNA
<400>4637
gtgcttttgg aggaggaaca    20
<210>4638
<211>20
<212>DNA
<400>4638
tcgactcgat ccaagagtat    20
<210>4639
<211>20
<212>DNA
<400>4639
tacggtaatc cccaagacgg    20
<210>4640
<211>20
<212>DNA
<400>4640
cgttagctca aggactgcga    20
<210>4641
<211>20
<212>DNA
<400>4641
cagagtcggg aactgtatgg    20
<210>4642
<211>20
<212>DNA
<400>4642
ttcaagcagg gaaacctgtg    20
<210>4643
<211>20
<212>DNA
<400>4643
cgcagactct ctgcatttcg    20
<210>4644
<211>20
<212>DNA
<400>4644
gggaaacgtt ggtagacct    20
<210>4645
<211>20
<212>DNA
<400>4645
gagctatgga ttctcttcgc    20
<210>4646
<211>20
<212>DNA
<400>4646
aggtaggaag gggtagcettg    20
<210>4647
<211>20

```

<212>DNA
 <400>4647
 gagcctgcat cagaagattc 20
 <210>4648
 <211>20
 <212>DNA
 <400>4648
 cttgaagaga gaatccccga 20
 <210>4649
 <211>20
 <212>DNA
 <400>4649
 cttccagcaa aacagatggc 20
 <210>4650
 <211>20
 <212>DNA
 <400>4650
 gttacgagct gtgaaacacg 20
 <210>4651
 <211>20
 <212>DNA
 <400>4651
 ggccatggag ttttccttct 20
 <210>4652
 <211>20
 <212>DNA
 <400>4652
 gctgcgctat actccgtaaa 20
 <210>4653
 <211>20
 <212>DNA
 <400>4653
 atcttgaggc ctttaggagc 20
 <210>4654
 <211>20
 <212>DNA
 <400>4654
 ggaattcacc tgagttcctt 20
 <210>4655
 <211>20
 <212>DNA
 <400>4655
 gtcggtgttt gctgatgaga 20
 <210>4656
 <211>20
 <212>DNA
 <400>4656
 cgtattgatc gcagtctgga 20
 <210>4657
 <211>20
 <212>DNA
 <400>4657
 aagcacgggt gattctgaga 20
 <210>4658
 <211>20
 <212>DNA
 <400>4658
 gtacctaaga attcgtgcgt 20
 <210>4659
 <211>20
 <212>DNA
 <400>4659
 catgttcgaa ttcgctgcgt 20
 <210>4660

<211>20
<212>DNA
<400>4660
gggtagggag aacgatgttt 20
<210>4661
<211>20
<212>DNA
<400>4661
gaccgcagca attgctaata 20
<210>4662
<211>20
<212>DNA
<400>4662
ggttttacggg ttctagttcc 20
<210>4663
<211>20
<212>DNA
<400>4663
agcagcgggt ccagaactta 20
<210>4664
<211>20
<212>DNA
<400>4664
gggtagggga ttagaatctg 20
<210>4665
<211>20
<212>DNA
<400>4665
gatcaggtat acgggtcccaa 20
<210>4666
<211>20
<212>DNA
<400>4666
gggttctgtg gtggacataa 20
<210>4667
<211>20
<212>DNA
<400>4667
ctgtgactac tggagaagac 20
<210>4668
<211>20
<212>DNA
<400>4668
cacgggcatac gtcttttagt 20
<210>4669
<211>20
<212>DNA
<400>4669
gcagttacca tgatcttcgg 20
<210>4670
<211>20
<212>DNA
<400>4670
ggagatgcac ttgatgttcc 20
<210>4671
<211>20
<212>DNA
<400>4671
gcttgatgaa cagcagggt 20
<210>4672
<211>20
<212>DNA
<400>4672
ggccgagtgt ttcaggccat 20

<210>4673
<211>20
<212>DNA
<400>4673
tcttccatgg gtatgtgagc 20
<210>4674
<211>20
<212>DNA
<400>4674
gtgggggatg taggtgtaac 20
<210>4675
<211>20
<212>DNA
<400>4675
ctgcctcatt actcgacttg 20
<210>4676
<211>20
<212>DNA
<400>4676
caatctcagc gagtttggct 20
<210>4677
<211>20
<212>DNA
<400>4677
tcgtgatcag atggaccaag 20
<210>4678
<211>20
<212>DNA
<400>4678
cctctcctaa gagatcttgc 20
<210>4679
<211>20
<212>DNA
<400>4679
ctcaagatcg gcgtaaggac 20
<210>4680
<211>20
<212>DNA
<400>4680
ggggattttg gggatgcata 20
<210>4681
<211>20
<212>DNA
<400>4681
atcgaagggt acaacctgag 20
<210>4682
<211>20
<212>DNA
<400>4682
gcatgacctc gattcgtaag 20
<210>4683
<211>20
<212>DNA
<400>4683
ctctgcaagt tcgtgagaga 20
<210>4684
<211>20
<212>DNA
<400>4684
gcttgcgat agagagcttg 20
<210>4685
<211>20
<212>DNA
<400>4685

gagaccttgg tccccatggt 20
<210>4686
<211>20
<212>DNA
<400>4686
gatttcttct tggcgcctgc 20
<210>4687
<211>20
<212>DNA
<400>4687
gtgcaggctt tatcataggc 20
<210>4688
<211>20
<212>DNA
<400>4688
gcgcttaaga tcaagaggag 20
<210>4689
<211>20
<212>DNA
<400>4689
gccgaaagat cacagttacc 20
<210>4690
<211>20
<212>DNA
<400>4690
gtgctttcgt cttgttcgta 20
<210>4691
<211>20
<212>DNA
<400>4691
ccggtatcat tgtcaggagt 20
<210>4692
<211>20
<212>DNA
<400>4692
ggacttaggt tctgtgaagc 20
<210>4693
<211>20
<212>DNA
<400>4693
cctgtgcttt agcatgccac 20
<210>4694
<211>20
<212>DNA
<400>4694
ggacttaggt tctgtgaagc 20
<210>4695
<211>20
<212>DNA
<400>4695
cgtgtctgtt cttcaacagc 20
<210>4696
<211>20
<212>DNA
<400>4696
cctatagtag ctgtggaaac 20
<210>4697
<211>20
<212>DNA
<400>4697
ttcggtagct tgggcacatc 20
<210>4698
<211>20
<212>DNA


```

<400>4698
gtgaagatcc cttggggatt      20
<210>4699
<211>20
<212>DNA
<400>4699
ggagaagagg ttgcaggttt      20
<210>4700
<211>20
<212>DNA
<400>4700
gcatggctct aaaagccgtg      20
<210>4701
<211>20
<212>DNA
<400>4701
cggggagatt gaactccttt      20
<210>4702
<211>20
<212>DNA
<400>4702
caggggctat tacagcagca      20
<210>4703
<211>20
<212>DNA
<400>4703
gacttctcgt ttttgtcctg      20
<210>4704
<211>20
<212>DNA
<400>4704
gtagcttggg cacatcttga      20
<210>4705
<211>20
<212>DNA
<400>4705
gacttctcgt ttttgtcctg      20
<210>4706
<211>20
<212>DNA
<400>4706
ccaagggttc ttgtgtggat      20
<210>4707
<211>20
<212>DNA
<400>4707
gccagaaata caaggagtt      20
<210>4708
<211>20
<212>DNA
<400>4708
gcaaagatgg tttcaccgca      20
<210>4709
<211>20
<212>DNA
<400>4709
aggtcgtccc ttgcaagccc      20
<210>4710
<211>20
<212>DNA
<400>4710
gacttctcgt ttttgtcctg      20
<210>4711
<211>20

```

<212>DNA
<400>4711
gagacagtgt ggggaaatag 20
<210>4712
<211>20
<212>DNA
<400>4712
cctcaaggcg gtggtggaat 20
<210>4713
<211>20
<212>DNA
<400>4713
cctctccgtt agcctcatta 20
<210>4714
<211>20
<212>DNA
<400>4714
ggggtaaaga gggacttcta 20
<210>4715
<211>20
<212>DNA
<400>4715
gaagttctac aaggatgtgg 20
<210>4716
<211>20
<212>DNA
<400>4716
gaccaagcag ttctatggtg 20
<210>4717
<211>20
<212>DNA
<400>4717
ctaccaactt ctcagtggaa 20
<210>4718
<211>20
<212>DNA
<400>4718
gggtcagaga ttttgctcag 20
<210>4719
<211>20
<212>DNA
<400>4719
tacggtgatg ccttggtgct 20
<210>4720
<211>20
<212>DNA
<400>4720
ctagatcacc acaggaagtt 20
<210>4721
<211>20
<212>DNA
<400>4721
gactacgccg aaatccttac 20
<210>4722
<211>20
<212>DNA
<400>4722
cttgccagtg ttgcagatgt 20
<210>4723
<211>20
<212>DNA
<400>4723
gatctgcaca agtcgcactt 20
<210>4724

<211>20
<212>DNA
<400>4724
cacgaagctg catctccaaa 20
<210>4725
<211>20
<212>DNA
<400>4725
tgaggacaac agcaacactc 20
<210>4726
<211>20
<212>DNA
<400>4726
acccgacttg tagagcgata 20
<210>4727
<211>20
<212>DNA
<400>4727
tcacctcagg tagcgaacac 20
<210>4728
<211>20
<212>DNA
<400>4728
aggtgctacc gcacccttta 20
<210>4729
<211>20
<212>DNA
<400>4729
cctagctcta gggcgattat 20
<210>4730
<211>20
<212>DNA
<400>4730
cctgacattc ggaatcttcc 20
<210>4731
<211>20
<212>DNA
<400>4731
cgcggaagaaag acggctatgc 20
<210>4732
<211>20
<212>DNA
<400>4732
cgcaaccact aagagctaac 20
<210>4733
<211>20
<212>DNA
<400>4733
gggagaaaga atgtgccgat 20
<210>4734
<211>20
<212>DNA
<400>4734
ggcaaggcta attcctgtca 20
<210>4735
<211>20
<212>DNA
<400>4735
ccctgatgat gccatttcct 20
<210>4736
<211>20
<212>DNA
<400>4736
gctaagcacc gagagaaaaa 20

<210>4737
<211>20
<212>DNA
<400>4737
cgtgtcatgt gtgccatttg 20
<210>4738
<211>20
<212>DNA
<400>4738
gccctttgga attccttaggt 20
<210>4739
<211>20
<212>DNA
<400>4739
ctagagagcg ttcccctgtg 20
<210>4740
<211>20
<212>DNA
<400>4740
aacacggtcg ccagggttgta 20
<210>4741
<211>20
<212>DNA
<400>4741
cagtaacaag tcctggagca 20
<210>4742
<211>20
<212>DNA
<400>4742
aggtcgcacc ccggaagggt 20
<210>4743
<211>20
<212>DNA
<400>4743
gagatcctgc ctccaatgta 20
<210>4744
<211>20
<212>DNA
<400>4744
gtgagcttgg cattgatacc 20
<210>4745
<211>20
<212>DNA
<400>4745
ggtctcacca gtaattgctg 20
<210>4746
<211>20
<212>DNA
<400>4746
gcatcgttgg cacagatcat 20
<210>4747
<211>20
<212>DNA
<400>4747
ggcaaagcct tagatcgtgt 20
<210>4748
<211>20
<212>DNA
<400>4748
ccatatcctt ggcatcacc 20
<210>4749
<211>20
<212>DNA
<400>4749

tagagagctc ccctagatga 20
<210>4750
<211>20
<212>DNA
<400>4750
ggcaaagcct tagatcgtgt 20
<210>4751
<211>20
<212>DNA
<400>4751
gatcaaccca atagcatgag 20
<210>4752
<211>20
<212>DNA
<400>4752
cccgatttgt atccaactac 20
<210>4753
<211>20
<212>DNA
<400>4753
gcctgaattg ggggtctttt 20
<210>4754
<211>20
<212>DNA
<400>4754
tttctccctc actgcggatt 20
<210>4755
<211>20
<212>DNA
<400>4755
gtacttcccc aaacatggac 20
<210>4756
<211>20
<212>DNA
<400>4756
cctcgtaggc ttcaggaaat 20
<210>4757
<211>20
<212>DNA
<400>4757
cctacggaca tggcaataac 20
<210>4758
<211>20
<212>DNA
<400>4758
ccgctgttgt atcctaaggt 20
<210>4759
<211>20
<212>DNA
<400>4759
cggctatcag gaagataagc 20
<210>4760
<211>20
<212>DNA
<400>4760
ccccacaaaa cctggattga 20
<210>4761
<211>20
<212>DNA
<400>4761
cgtcaggact actttaaggc 20
<210>4762
<211>20
<212>DNA

<400>4762
 cctacggaca tggcaataac 20
 <210>4763
 <211>20
 <212>DNA
 <400>4763
 ggctgttctc tactcgcaat 20
 <210>4764
 <211>20
 <212>DNA
 <400>4764
 cgaagcagct tccatgttga 20
 <210>4765
 <211>20
 <212>DNA
 <400>4765
 ggcagtctgt actcaagatt 20
 <210>4766
 <211>20
 <212>DNA
 <400>4766
 gtcccggaaa cgacattatg 20
 <210>4767
 <211>20
 <212>DNA
 <400>4767
 tcgccgaggg agttcataat 20
 <210>4768
 <211>20
 <212>DNA
 <400>4768
 gcgcttgata gaaactccga 20
 <210>4769
 <211>20
 <212>DNA
 <400>4769
 gcttgtgtca acctcctcca 20
 <210>4770
 <211>20
 <212>DNA
 <400>4770
 cttggttaaa ggtgacaggc 20
 <210>4771
 <211>20
 <212>DNA
 <400>4771
 caccggtcat cacttatggt 20
 <210>4772
 <211>20
 <212>DNA
 <400>4772
 tgcacgctag caatttaggg 20
 <210>4773
 <211>20
 <212>DNA
 <400>4773
 cttcagggct tttaggaacc 20
 <210>4774
 <211>20
 <212>DNA
 <400>4774
 gagatcgag taaacggaag 20
 <210>4775
 <211>20

<212>DNA
 <400>4775
 cgccgtcata ttgcttcttt 20
 <210>4776
 <211>20
 <212>DNA
 <400>4776
 ggaggcttct gttcgtagaa 20
 <210>4777
 <211>20
 <212>DNA
 <400>4777
 tattgagggg cagacctacg 20
 <210>4778
 <211>20
 <212>DNA
 <400>4778
 gctgtctatg cttttgtgga 20
 <210>4779
 <211>20
 <212>DNA
 <400>4779
 gcgcctgact attttcacca 20
 <210>4780
 <211>20
 <212>DNA
 <400>4780
 gtgaatggag aggatagaca 20
 <210>4781
 <211>20
 <212>DNA
 <400>4781
 ccggagtct tcaatcacga 20
 <210>4782
 <211>20
 <212>DNA
 <400>4782
 cgaggcctta aaaaaccgtc 20
 <210>4783
 <211>20
 <212>DNA
 <400>4783
 gtagtgacct acggcatgaa 20
 <210>4784
 <211>20
 <212>DNA
 <400>4784
 cagcaagcgc ctgactattt 20
 <210>4785
 <211>20
 <212>DNA
 <400>4785
 gacgcttaag agtttcgtca 20
 <210>4786
 <211>20
 <212>DNA
 <400>4786
 tacacccttc ctccgcaggt 20
 <210>4787
 <211>20
 <212>DNA
 <400>4787
 ccactccttt aggaccgata 20
 <210>4788

<211>20
 <212>DNA
 <400>4788
 gaggaccatt gaggaagaga 20
 <210>4789
 <211>20
 <212>DNA
 <400>4789
 gcgtctctgt ccaaagagaa 20
 <210>4790
 <211>20
 <212>DNA
 <400>4790
 ccccgagttg tattgcctat 20
 <210>4791
 <211>20
 <212>DNA
 <400>4791
 gcggacggta tgttttgaag 20
 <210>4792
 <211>20
 <212>DNA
 <400>4792
 ggcttggaag gggtttcaat 20
 <210>4793
 <211>20
 <212>DNA
 <400>4793
 cgtcggctcc tgacatattt 20
 <210>4794
 <211>20
 <212>DNA
 <400>4794
 gcaggcaccc actctttttt 20
 <210>4795
 <211>20
 <212>DNA
 <400>4795
 ggaatatcag agtaggcgag 20
 <210>4796
 <211>20
 <212>DNA
 <400>4796
 ggtgatgata agaccacaa 20
 <210>4797
 <211>20
 <212>DNA
 <400>4797
 ctagtcgggt agccccctcat 20
 <210>4798
 <211>20
 <212>DNA
 <400>4798
 ccgcaatcac cacgatgaaa 20
 <210>4799
 <211>20
 <212>DNA
 <400>4799
 gccccaaagag tttgatagga 20
 <210>4800
 <211>20
 <212>DNA
 <400>4800
 gcttttcgccg tgactttgtt 20

<210>4801
<211>20
<212>DNA
<400>4801
gataccttcct atagcgacca 20
<210>4802
<211>20
<212>DNA
<400>4802
ggtatctcgt gtgaagaagc 20
<210>4803
<211>20
<212>DNA
<400>4803
caagaaagct cgtgacgact 20
<210>4804
<211>20
<212>DNA
<400>4804
gtcctgtatc aggagagggtt 20
<210>4805
<211>20
<212>DNA
<400>4805
cttcagctcc ccagctttta 20
<210>4806
<211>20
<212>DNA
<400>4806
agctgccccca agagtttgat 20
<210>4807
<211>20
<212>DNA
<400>4807
gggatacctgc ctgggtttttt 20
<210>4808
<211>20
<212>DNA
<400>4808
aaatgttgga gtaccgcagc 20
<210>4809
<211>20
<212>DNA
<400>4809
cctgcatgac aggaggccga 20
<210>4810
<211>20
<212>DNA
<400>4810
ttctaacgac aagggtggga 20
<210>4811
<211>20
<212>DNA
<400>4811
gatgaagtgc tgcaggaggc 20
<210>4812
<211>20
<212>DNA
<400>4812
cgcagttgca caagaagtgt 20
<210>4813
<211>20
<212>DNA
<400>4813

aatctttcagc ggcctccac 20
 <210>4814
 <211>20
 <212>DNA
 <400>4814
 ggttttgcagc tcagagaaga 20
 <210>4815
 <211>20
 <212>DNA
 <400>4815
 ctgaagagcg acactatctg 20
 <210>4816
 <211>20
 <212>DNA
 <400>4816
 gtcggttgcg ttttcgcttg 20
 <210>4817
 <211>20
 <212>DNA
 <400>4817
 tcgcgctaac gcaggtttta 20
 <210>4818
 <211>20
 <212>DNA
 <400>4818
 gcaaggtgca acagggattt 20
 <210>4819
 <211>20
 <212>DNA
 <400>4819
 ggaggaaacg tccatgaaca 20
 <210>4820
 <211>20
 <212>DNA
 <400>4820
 gcctcctttt tcgccagttt 20
 <210>4821
 <211>20
 <212>DNA
 <400>4821
 ggggtgtgcct tttctatctc 20
 <210>4822
 <211>20
 <212>DNA
 <400>4822
 ccagctctac ctacgggaat 20
 <210>4823
 <211>20
 <212>DNA
 <400>4823
 ctctggaaga tgcacgcttt 20
 <210>4824
 <211>20
 <212>DNA
 <400>4824
 ggaatggagt gggtagaaaa 20
 <210>4825
 <211>20
 <212>DNA
 <400>4825
 gttacagaca gatgtcgagc 20
 <210>4826
 <211>20
 <212>DNA

<400>4826
ccccctaagg ttaacagtag 20
<210>4827
<211>20
<212>DNA
<400>4827
tagaagcgca agggatcagg 20
<210>4828
<211>20
<212>DNA
<400>4828
ggacgtggag gaggattttt 20
<210>4829
<211>20
<212>DNA
<400>4829
cctgtgtcat agacatagcg 20
<210>4830
<211>20
<212>DNA
<400>4830
gacagatgtc gagcggtaat 20
<210>4831
<211>20
<212>DNA
<400>4831
gctcaggatt tcgtgacgaa 20
<210>4832
<211>20
<212>DNA
<400>4832
gccattcagg tatagctgag 20
<210>4833
<211>20
<212>DNA
<400>4833
ggagagagta aggaagatgg 20
<210>4834
<211>20
<212>DNA
<400>4834
gggtttatag ggggttggct 20
<210>4835
<211>20
<212>DNA
<400>4835
gagtgcgag aatcctgaga 20
<210>4836
<211>20
<212>DNA
<400>4836
gtcggcggat ggagtcacta 20
<210>4837
<211>20
<212>DNA
<400>4837
ccaccattcg cagttgttgt 20
<210>4838
<211>20
<212>DNA
<400>4838
ccgcattctga gggtttttgtt 20
<210>4839
<211>20

<212>DNA
<400>4839
tttgtgctga aggtcacggt 20
<210>4840
<211>20
<212>DNA
<400>4840
gcatgggtgca ccaatagaga 20
<210>4841
<211>20
<212>DNA
<400>4841
ctcccgaagt ttcagcagta 20
<210>4842
<211>20
<212>DNA
<400>4842
cggttaagcat ctacagcgta 20
<210>4843
<211>20
<212>DNA
<400>4843
ccccccatcc attaagatgc 20
<210>4844
<211>20
<212>DNA
<400>4844
ccaagagaca gaggacttca 20
<210>4845
<211>20
<212>DNA
<400>4845
cccactggac ttggtttcta 20
<210>4846
<211>20
<212>DNA
<400>4846
cgataaagga atgatctggg 20
<210>4847
<211>20
<212>DNA
<400>4847
gcttcatctg cagagagctt 20
<210>4848
<211>20
<212>DNA
<400>4848
gcctttccca gcatcgttta 20
<210>4849
<211>20
<212>DNA
<400>4849
ccgaagagct ggcagaaagc 20
<210>4850
<211>20
<212>DNA
<400>4850
cagcagcaaa cgcagagaaa 20
<210>4851
<211>20
<212>DNA
<400>4851
gcacttatgt ggcgaaaacc 20
<210>4852

```

<211>20
<212>DNA
<400>4852
cggcgaagggt cagacttttta      20
<210>4853
<211>20
<212>DNA
<400>4853
cagcttcccc agagagttct      20
<210>4854
<211>20
<212>DNA
<400>4854
taagacggggc ggagttcgtg      20
<210>4855
<211>20
<212>DNA
<400>4855
cctcttggga aacttatgcc      20
<210>4856
<211>20
<212>DNA
<400>4856
cctttcttgt taaaaacacg      20
<210>4857
<211>20
<212>DNA
<400>4857
ctaatacggc tgcggattct      20
<210>4858
<211>20
<212>DNA
<400>4858
gggctatttg tgctactggt      20
<210>4859
<211>20
<212>DNA
<400>4859
gttccttctg aagtgatggg      20
<210>4860
<211>20
<212>DNA
<400>4860
gggctatttg tgctactggt      20
<210>4861
<211>20
<212>DNA
<400>4861
gttccttctg aagtgatggg      20
<210>4862
<211>20
<212>DNA
<400>4862
cacaggcacc tatactccta      20
<210>4863
<211>20
<212>DNA
<400>4863
gctggcatg gctgaacata      20
<210>4864
<211>20
<212>DNA
<400>4864
gtgactgtag gtgacatgag      20

```

<210>4865
 <211>20
 <212>DNA
 <400>4865
 cggaagcctt tgcgattttc 20
 <210>4866
 <211>20
 <212>DNA
 <400>4866
 gtatgggtcat ggtttcctcg 20
 <210>4867
 <211>20
 <212>DNA
 <400>4867
 gcacgtagag atgaaaccag 20
 <210>4868
 <211>20
 <212>DNA
 <400>4868
 ggcattttcc cattttcttac 20
 <210>4869
 <211>20
 <212>DNA
 <400>4869
 cgtggttgtc acagcaatct 20
 <210>4870
 <211>20
 <212>DNA
 <400>4870
 ctccattgggt actctgcaca 20
 <210>4871
 <211>20
 <212>DNA
 <400>4871
 gcctcctgac gaagtaaagt 20
 <210>4872
 <211>20
 <212>DNA
 <400>4872
 tcctagagtg gcaaacttgg 20
 <210>4873
 <211>20
 <212>DNA
 <400>4873
 ggaaaggccc ttccctaata 20
 <210>4874
 <211>20
 <212>DNA
 <400>4874
 cccttccta ataaggagag 20
 <210>4875
 <211>20
 <212>DNA
 <400>4875
 tcgcggttat ggacaacccg 20
 <210>4876
 <211>20
 <212>DNA
 <400>4876
 atagctccac ccttctccgc 20
 <210>4877
 <211>20
 <212>DNA
 <400>4877

cggggctaca gaaaactc 20
 <210>4878
 <211>20
 <212>DNA
 <400>4878
 tcgcacccgc atcatttggt 20
 <210>4879
 <211>20
 <212>DNA
 <400>4879
 gcggcgtaga tttgctcctg 20
 <210>4880
 <211>20
 <212>DNA
 <400>4880
 ttgtcagggtc tgaggtaggt 20
 <210>4881
 <211>20
 <212>DNA
 <400>4881
 cactgccatt cctatcttgc 20
 <210>4882
 <211>20
 <212>DNA
 <400>4882
 gaagccattg caacgtgaag 20
 <210>4883
 <211>20
 <212>DNA
 <400>4883
 cggggccgaga tcatatttct 20
 <210>4884
 <211>20
 <212>DNA
 <400>4884
 ggctgttatg ggaaggattc 20
 <210>4885
 <211>20
 <212>DNA
 <400>4885
 cttaaggcag cactttggct 20
 <210>4886
 <211>20
 <212>DNA
 <400>4886
 cgacggtttg aggataacga 20
 <210>4887
 <211>20
 <212>DNA
 <400>4887
 gagagtttcg tgaccaagcc 20
 <210>4888
 <211>20
 <212>DNA
 <400>4888
 ctcccttagag gactctctct 20
 <210>4889
 <211>20
 <212>DNA
 <400>4889
 ggcgaggata ttgcaaagag 20
 <210>4890
 <211>20
 <212>DNA

<400>4890
 caaagggtc cctgaaaact 20
 <210>4891
 <211>20
 <212>DNA
 <400>4891
 tcccagacac accgttcgtc 20
 <210>4892
 <211>20
 <212>DNA
 <400>4892
 cccagaggca ttgtctctat 20
 <210>4893
 <211>20
 <212>DNA
 <400>4893
 ggcagcagtc tcttagttga 20
 <210>4894
 <211>20
 <212>DNA
 <400>4894
 gtgcagaatc actatcccca 20
 <210>4895
 <211>20
 <212>DNA
 <400>4895
 tcctgcccct catacctctt 20
 <210>4896
 <211>20
 <212>DNA
 <400>4896
 cccatcccgt ttgttctcgg 20
 <210>4897
 <211>20
 <212>DNA
 <400>4897
 ctcagtaccc ccaaactcaa 20
 <210>4898
 <211>20
 <212>DNA
 <400>4898
 ggtatcgagg gttcttattg 20
 <210>4899
 <211>20
 <212>DNA
 <400>4899
 agcttaggggt tcgacttcct 20
 <210>4900
 <211>20
 <212>DNA
 <400>4900
 catgtggctg tagtctgcaa 20
 <210>4901
 <211>20
 <212>DNA
 <400>4901
 ctgtagacgt atcagcagga 20
 <210>4902
 <211>20
 <212>DNA
 <400>4902
 gccatctatc gtatcgtacc 20
 <210>4903
 <211>20


```

<212>DNA
<400>4903
gagccactta tctctattcc      20
<210>4904
<211>20
<212>DNA
<400>4904
gttccaagat cctagagcgg      20
<210>4905
<211>20
<212>DNA
<400>4905
tggctccacc gttgctctgg      20
<210>4906
<211>20
<212>DNA
<400>4906
cgctccctgt gttcacgaat      20
<210>4907
<211>20
<212>DNA
<400>4907
aacagcaagg actccttgac      20
<210>4908
<211>20
<212>DNA
<400>4908
cagaggatca agctctttgc      20
<210>4909
<211>20
<212>DNA
<400>4909
gtgcagcgac atcgacaata      20
<210>4910
<211>20
<212>DNA
<400>4910
aatcctgtaa gagtggagag      20
<210>4911
<211>20
<212>DNA
<400>4911
ccgggggatgc tattttgatg      20
<210>4912
<211>20
<212>DNA
<400>4912
ctgagacaaa tgggtcgcac      20
<210>4913
<211>20
<212>DNA
<400>4913
gcctgtgggtt tgtattgggc      20
<210>4914
<211>20
<212>DNA
<400>4914
cctcctgaac catttcctga      20
<210>4915
<211>20
<212>DNA
<400>4915
gcgcagtttg attgtggact      20
<210>4916

```

<211>20
 <212>DNA
 <400>4916
 ctgtcggacc gttatttttg 20
 <210>4917
 <211>20
 <212>DNA
 <400>4917
 ggctccaaca aagaaggaag 20
 <210>4918
 <211>20
 <212>DNA
 <400>4918
 gaggttaagat gcggattcct 20
 <210>4919
 <211>20
 <212>DNA
 <400>4919
 catgatagcg ccgccccaaag 20
 <210>4920
 <211>20
 <212>DNA
 <400>4920
 gtcttgggta gtgtcatccc 20
 <210>4921
 <211>20
 <212>DNA
 <400>4921
 cccgtagctt ccatatggaa 20
 <210>4922
 <211>20
 <212>DNA
 <400>4922
 taggagccat gacgatccac 20
 <210>4923
 <211>20
 <212>DNA
 <400>4923
 gcggctatat ggaggcaaca 20
 <210>4924
 <211>20
 <212>DNA
 <400>4924
 gggacttgta gctacaacga 20
 <210>4925
 <211>20
 <212>DNA
 <400>4925
 cgggatgtcg attcatcaag 20
 <210>4926
 <211>20
 <212>DNA
 <400>4926
 gcaatgtgac tgatcctgtc 20
 <210>4927
 <211>20
 <212>DNA
 <400>4927
 ggaatcgagg gatcgatttt 20
 <210>4928
 <211>20
 <212>DNA
 <400>4928
 cgttcttcat cggaaggtga 20

<210>4929
<211>20
<212>DNA
<400>4929
gagacgagga tctctgcgga 20
<210>4930
<211>20
<212>DNA
<400>4930
gatcttgatg gtcccgtaga 20
<210>4931
<211>20
<212>DNA
<400>4931
ccctccttta gctactgtga 20
<210>4932
<211>20
<212>DNA
<400>4932
gtgcgagtac ttttccttcc 20
<210>4933
<211>20
<212>DNA
<400>4933
gggatccttg cttctgaaga 20
<210>4934
<211>20
<212>DNA
<400>4934
gtgcgagtac ttttccttcc 20
<210>4935
<211>20
<212>DNA
<400>4935
gtccaggggc gcatacgggt 20
<210>4936
<211>20
<212>DNA
<400>4936
ggactttgtc tatcgtctgg 20
<210>4937
<211>20
<212>DNA
<400>4937
ctggattctg aaatccctgc 20
<210>4938
<211>20
<212>DNA
<400>4938
cgtcgtcgta ctaaggcata 20
<210>4939
<211>20
<212>DNA
<400>4939
gcacagctga aagctgtgat 20
<210>4940
<211>20
<212>DNA
<400>4940
agcgtatctt cctaaggagc 20
<210>4941
<211>20
<212>DNA
<400>4941

tgtagttgc aggggtttcc 20
<210>4942
<211>20
<212>DNA
<400>4942
gatctctgta gctatgatgc 20
<210>4943
<211>20
<212>DNA
<400>4943
gcagattcgt gagcagattc 20
<210>4944
<211>20
<212>DNA
<400>4944
cgcagagata actaagcgtg 20
<210>4945
<211>20
<212>DNA
<400>4945
ggatctccac gaatctctga 20
<210>4946
<211>20
<212>DNA
<400>4946
cgtttggttg caaggcttgg 20
<210>4947
<211>20
<212>DNA
<400>4947
gagaattcgc ttctgatgct 20
<210>4948
<211>20
<212>DNA
<400>4948
gttgccgttc tagaaccctc 20
<210>4949
<211>20
<212>DNA
<400>4949
ggcagatggt ccaagagaag 20
<210>4950
<211>20
<212>DNA
<400>4950
gagcagaacg taccctatgg 20
<210>4951
<211>20
<212>DNA
<400>4951
tgtgagagac cactgccttc 20
<210>4952
<211>20
<212>DNA
<400>4952
gaagatccgg attttgtgcg 20
<210>4953
<211>20
<212>DNA
<400>4953
gcagctagcg gagtcttttt 20
<210>4954
<211>20
<212>DNA

<400>4954
gcgcggacgc tataatgata 20
<210>4955
<211>20
<212>DNA
<400>4955
gatatccaca tggtcggcag 20
<210>4956
<211>20
<212>DNA
<400>4956
gaagatccgg attttgtgcg 20
<210>4957
<211>20
<212>DNA
<400>4957
gcagctagcg gagtcttttt 20
<210>4958
<211>20
<212>DNA
<400>4958
gatcctcggga atacctgagc 20
<210>4959
<211>20
<212>DNA
<400>4959
ccaatcactt ccttgtgcga 20
<210>4960
<211>20
<212>DNA
<400>4960
gccaatacag agcgcaaagt 20
<210>4961
<211>20
<212>DNA
<400>4961
aagagcgtaa gctcagagcc 20
<210>4962
<211>20
<212>DNA
<400>4962
gaagaaaaac cacgcagttg 20
<210>4963
<211>20
<212>DNA
<400>4963
ggcagaggct ggaaagatcg 20
<210>4964
<211>20
<212>DNA
<400>4964
gttgccagag actactgaga 20
<210>4965
<211>20
<212>DNA
<400>4965
gcattggtac tcacgatggt 20
<210>4966
<211>20
<212>DNA
<400>4966
aacgtgcttt gcggttaacg 20
<210>4967
<211>20

<212>DNA
<400>4967
gcagaggctc tgtctttatg 20
<210>4968
<211>20
<212>DNA
<400>4968
ctcgcgagga agaagaaact 20
<210>4969
<211>20
<212>DNA
<400>4969
gaaggggaagt agcgggaaaa 20
<210>4970
<211>20
<212>DNA
<400>4970
ccttcctgcg atcaatggat 20
<210>4971
<211>20
<212>DNA
<400>4971
gccttccggt atggattcaa 20
<210>4972
<211>20
<212>DNA
<400>4972
gcgcttctaa gactagcggt 20
<210>4973
<211>20
<212>DNA
<400>4973
gaagacggga acaagagctt 20
<210>4974
<211>20
<212>DNA
<400>4974
atgtgcagag gctctgtctt 20
<210>4975
<211>20
<212>DNA
<400>4975
catcctgaat cgtgcatggt 20
<210>4976
<211>20
<212>DNA
<400>4976
gcaggtaata gcgagagtag 20
<210>4977
<211>20
<212>DNA
<400>4977
ccggatcatc tctggaacta 20
<210>4978
<211>20
<212>DNA
<400>4978
atctccacgc acaaccgatt 20
<210>4979
<211>20
<212>DNA
<400>4979
gagtgtctctg tagtttcggt 20
<210>4980

<211>20
<212>DNA
<400>4980
gagatccctc cttctcttca 20
<210>4981
<211>20
<212>DNA
<400>4981
cagagcggag aaacgaacaa 20
<210>4982
<211>20
<212>DNA
<400>4982
gataaggggc aatccttatg 20
<210>4983
<211>20
<212>DNA
<400>4983
gtagctacgg cttgtatagc 20
<210>4984
<211>20
<212>DNA
<400>4984
gcgagcaatt ttcctagcct 20
<210>4985
<211>20
<212>DNA
<400>4985
gttgtccttg gtaacaagcg 20
<210>4986
<211>20
<212>DNA
<400>4986
ctccaaaagc caaagagaac 20
<210>4987
<211>20
<212>DNA
<400>4987
gcgaggctgg aattatttcg 20
<210>4988
<211>20
<212>DNA
<400>4988
gcgtttccgg gacgcgtggt 20
<210>4989
<211>20
<212>DNA
<400>4989
ctgaagggtg ggggacctca 20
<210>4990
<211>20
<212>DNA
<400>4990
gtgaggaaga gacggagtta 20
<210>4991
<211>20
<212>DNA
<400>4991
ggcgaatctc gtctcggaat 20
<210>4992
<211>20
<212>DNA
<400>4992
gtgattgatc gtcaagagtc 20

<210>4993
<211>20
<212>DNA
<400>4993
ggctgccctg tttttaggta 20
<210>4994
<211>20
<212>DNA
<400>4994
ctacaggctg ccctgttttt 20
<210>4995
<211>20
<212>DNA
<400>4995
cttcagagta cttacggcca 20
<210>4996
<211>20
<212>DNA
<400>4996
agtatcgcaa gcttcaggca 20
<210>4997
<211>20
<212>DNA
<400>4997
ttcatcaaag tcgtctccac 20
<210>4998
<211>20
<212>DNA
<400>4998
gggctttctc catgctttct 20
<210>4999
<211>20
<212>DNA
<400>4999
cggcatctcg aaccattctt 20
<210>5000
<211>20
<212>DNA
<400>5000
actgcttgac gttttgctgg 20
<210>5001
<211>20
<212>DNA
<400>5001
gcaactcctt gatcagagaa 20
<210>5002
<211>20
<212>DNA
<400>5002
gctgccgatg atgctgctgc 20
<210>5003
<211>20
<212>DNA
<400>5003
gtagtcgagc ttaagtcctg 20
<210>5004
<211>20
<212>DNA
<400>5004
cactcgtgaa ctgagtggct 20
<210>5005
<211>20
<212>DNA
<400>5005

ggatagattc tggaagagcg 20
<210>5006
<211>20
<212>DNA
<400>5006
agagagtgcg gatggcaaca 20
<210>5007
<211>20
<212>DNA
<400>5007
gggttgggtt aggaagttca 20
<210>5008
<211>20
<212>DNA
<400>5008
tcgaggtgcg tttggtctat 20
<210>5009
<211>20
<212>DNA
<400>5009
cgccgagctt gtttactcat 20
<210>5010
<211>20
<212>DNA
<400>5010
ggtaagcaga gcctcttttc 20
<210>5011
<211>20
<212>DNA
<400>5011
ggtttgggga tgtgttctct 20
<210>5012
<211>20
<212>DNA
<400>5012
gcgaaaaaga gaccgaagag 20
<210>5013
<211>20
<212>DNA
<400>5013
cggcgtctgt aaaagagcag 20
<210>5014
<211>20
<212>DNA
<400>5014
ctggtgctca atgcattcgt 20
<210>5015
<211>20
<212>DNA
<400>5015
ggaaatcggt cctaggatgt 20
<210>5016
<211>20
<212>DNA
<400>5016
gggtatagag ttttgtcccg 20
<210>5017
<211>20
<212>DNA
<400>5017
cgaaaagtgt ggctccgttc 20
<210>5018
<211>20
<212>DNA

<400>5018
ccatcaagtt ttccgtggag 20
<210>5019
<211>20
<212>DNA
<400>5019
ggctgaagtg atgttgaagc 20
<210>5020
<211>20
<212>DNA
<400>5020
gggggcttcc caatctgtgg 20
<210>5021
<211>20
<212>DNA
<400>5021
ggcacgtcgt catttgatga 20
<210>5022
<211>20
<212>DNA
<400>5022
ggtcacatctcg gaaataacgc 20
<210>5023
<211>20
<212>DNA
<400>5023
cccagttgat gagccatctt 20
<210>5024
<211>20
<212>DNA
<400>5024
ggcacgtcgt catttgatga 20
<210>5025
<211>20
<212>DNA
<400>5025
gtgcgatcat acttactcgc 20
<210>5026
<211>20
<212>DNA
<400>5026
gcactgagga tacgttggtt 20
<210>5027
<211>20
<212>DNA
<400>5027
ggtcggagag gctctataaa 20
<210>5028
<211>20
<212>DNA
<400>5028
gtcgagcatt gctgaggaaa 20
<210>5029
<211>20
<212>DNA
<400>5029
cttcaaaggc gtccttttgc 20
<210>5030
<211>20
<212>DNA
<400>5030
tcttcggatg aagagggtgc 20
<210>5031
<211>20

<212>DNA
<400>5031
aagcccgcgc gctccgttta 20
<210>5032
<211>20
<212>DNA
<400>5032
ccgaacgagc ctttggtgga 20
<210>5033
<211>20
<212>DNA
<400>5033
gcttctgctc ttgttggtgc 20
<210>5034
<211>20
<212>DNA
<400>5034
cgaggccgca aaaaatcttc 20
<210>5035
<211>20
<212>DNA
<400>5035
gcgacaaatc aacctcgaga 20
<210>5036
<211>20
<212>DNA
<400>5036
gcttctgctc ttgttggtgc 20
<210>5037
<211>20
<212>DNA
<400>5037
gggggagtggt ttgttgatga 20
<210>5038
<211>20
<212>DNA
<400>5038
ggaaggagat ttgcaactcc 20
<210>5039
<211>20
<212>DNA
<400>5039
ggcttcgtct ttagaagtcc 20
<210>5040
<211>20
<212>DNA
<400>5040
gactttgggt atgggtatcg 20
<210>5041
<211>20
<212>DNA
<400>5041
agagaatgcg ggctgaagag 20
<210>5042
<211>20
<212>DNA
<400>5042
gcttggtatt tacgagcggc 20
<210>5043
<211>20
<212>DNA
<400>5043
tacgctagta aagcttggcg 20
<210>5044

<211>20
<212>DNA
<400>5044
cccaatagct atggtggttag 20
<210>5045
<211>20
<212>DNA
<400>5045
gcgacgttct ttgtttgctg 20
<210>5046
<211>20
<212>DNA
<400>5046
gccaaaaata cagggttccc 20
<210>5047
<211>20
<212>DNA
<400>5047
cctgagcatt gacttgggat 20
<210>5048
<211>20
<212>DNA
<400>5048
ggaatgcgat acatgtgaag 20
<210>5049
<211>20
<212>DNA
<400>5049
atttagcggc tctctcggac 20
<210>5050
<211>20
<212>DNA
<400>5050
cagatagggt ttgcatgcct 20
<210>5051
<211>20
<212>DNA
<400>5051
ggagaagtga atcgcatgcc 20
<210>5052
<211>20
<212>DNA
<400>5052
gcccatacata cgttatcctg 20
<210>5053
<211>20
<212>DNA
<400>5053
cggccgttac tgtcattgat 20
<210>5054
<211>20
<212>DNA
<400>5054
gggatattgt aggtacaccc 20
<210>5055
<211>20
<212>DNA
<400>5055
cgagtcggca aaagaaactg 20
<210>5056
<211>20
<212>DNA
<400>5056
ggagggtatga ttactctggg 20

<210>5057
<211>20
<212>DNA
<400>5057
tgtgggtagc agaggctttg 20
<210>5058
<211>20
<212>DNA
<400>5058
cctgatcacg cagcaataac 20
<210>5059
<211>20
<212>DNA
<400>5059
tgggagcctt gccttctggg 20
<210>5060
<211>20
<212>DNA
<400>5060
gttggtcgtc aacgttgggt 20
<210>5061
<211>20
<212>DNA
<400>5061
ctctctgggc atgttttttg 20
<210>5062
<211>20
<212>DNA
<400>5062
gcttttcctg agagacgtat 20
<210>5063
<211>20
<212>DNA
<400>5063
gttcccttct agagtatgcg 20
<210>5064
<211>20
<212>DNA
<400>5064
caagtgaact tagaggctgc 20
<210>5065
<211>20
<212>DNA
<400>5065
gcgatagaag acggttcata 20
<210>5066
<211>20
<212>DNA
<400>5066
cctcctaggt taaggtagtc 20
<210>5067
<211>20
<212>DNA
<400>5067
cacgacaggg gttttgaacg 20
<210>5068
<211>20
<212>DNA
<400>5068
caaatcccgt aagaagactc 20
<210>5069
<211>20
<212>DNA
<400>5069

gctgtgtttt ggctgaggaa 20
<210>5070
<211>20
<212>DNA
<400>5070
caggaggcca agaatcacao 20
<210>5071
<211>20
<212>DNA
<400>5071
cgatcatcacg aaaatcgtgc 20
<210>5072
<211>20
<212>DNA
<400>5072
ggatggacac cttgctttgt 20
<210>5073
<211>20
<212>DNA
<400>5073
gacttggtat gttgcttgga 20
<210>5074
<211>20
<212>DNA
<400>5074
gaaagcagat cgatcatcacg 20
<210>5075
<211>20
<212>DNA
<400>5075
gctccttgga tagtaatggc 20
<210>5076
<211>20
<212>DNA
<400>5076
ggagaacatc gtttgctcgt 20
<210>5077
<211>20
<212>DNA
<400>5077
gggaatgaaa gatccacggc 20
<210>5078
<211>20
<212>DNA
<400>5078
gctccttgga tagtaatggc 20
<210>5079
<211>20
<212>DNA
<400>5079
gcagcaaaaa cagctgtagc 20
<210>5080
<211>20
<212>DNA
<400>5080
agacgcggga tctccgaagg 20
<210>5081
<211>20
<212>DNA
<400>5081
agagagccca cctccatgtt 20
<210>5082
<211>20
<212>DNA

<400>5082
tcctgaggcg agagagagcc 20
<210>5083
<211>20
<212>DNA
<400>5083
gtgggtggag ctactgttgc 20
<210>5084
<211>20
<212>DNA
<400>5084
gaagcgggtga tcttaggaaa 20
<210>5085
<211>20
<212>DNA
<400>5085
gccgatgcaa agagctagaa 20
<210>5086
<211>20
<212>DNA
<400>5086
ggttttgtttc cccgcggaat 20
<210>5087
<211>20
<212>DNA
<400>5087
gagcccctac aaaagccacc 20
<210>5088
<211>20
<212>DNA
<400>5088
gccgatgcaa agagctagaa 20
<210>5089
<211>20
<212>DNA
<400>5089
caagccgaaa cggtagagat 20
<210>5090
<211>20
<212>DNA
<400>5090
gcaaggaacc ggggtgtggca 20
<210>5091
<211>20
<212>DNA
<400>5091
ggggaagttg cttcggataa 20
<210>5092
<211>20
<212>DNA
<400>5092
ctctcccgaa gaagacttag 20
<210>5093
<211>20
<212>DNA
<400>5093
ggggaacctc attgtctcta 20
<210>5094
<211>20
<212>DNA
<400>5094
gttcgtcaga gagggacccg 20
<210>5095
<211>20

<212>DNA
<400>5095
gcgaactaca ggtcaacgat 20
<210>5096
<211>20
<212>DNA
<400>5096
ggggaagttg cttcggataa 20
<210>5097
<211>20
<212>DNA
<400>5097
caacgaccct tgtcaacgta 20
<210>5098
<211>20
<212>DNA
<400>5098
ggcgaagaat tcgaaatctc 20
<210>5099
<211>20
<212>DNA
<400>5099
cgttcgccac atgtggataa 20
<210>5100
<211>20
<212>DNA
<400>5100
ccatgcagaa gaggaaggaa 20
<210>5101
<211>20
<212>DNA
<400>5101
ggacagacca tcatttctgg 20
<210>5102
<211>20
<212>DNA
<400>5102
agcgatceca tctaccgcat 20
<210>5103
<211>20
<212>DNA
<400>5103
ctcaaagagc gttgtgcaga 20
<210>5104
<211>20
<212>DNA
<400>5104
taggaccaat tcctctgcct 20
<210>5105
<211>20
<212>DNA
<400>5105
ctgtagccgt atttgacgcc 20
<210>5106
<211>20
<212>DNA
<400>5106
ggtagcagta attaccccag 20
<210>5107
<211>20
<212>DNA
<400>5107
catcgtatgg cggaagcaaa 20
<210>5108

<211>20
 <212>DNA
 <400>5108
 gtgaagacac ccatcgtatg 20
 <210>5109
 <211>20
 <212>DNA
 <400>5109
 ctgggaaaca tcgacctgtt 20
 <210>5110
 <211>20
 <212>DNA
 <400>5110
 gctagcgaac gtaggaattg 20
 <210>5111
 <211>20
 <212>DNA
 <400>5111
 gcgtgatttt ccttcgtaca 20
 <210>5112
 <211>20
 <212>DNA
 <400>5112
 gcctatatg gtggtgaagg 20
 <210>5113
 <211>20
 <212>DNA
 <400>5113
 ctacgcatag acggacaagt 20
 <210>5114
 <211>20
 <212>DNA
 <400>5114
 ggttacataa atcgcggctc 20
 <210>5115
 <211>20
 <212>DNA
 <400>5115
 gcgcgttgct tctgcttcac 20
 <210>5116
 <211>20
 <212>DNA
 <400>5116
 ggaagcagac tcaatccaga 20
 <210>5117
 <211>20
 <212>DNA
 <400>5117
 ctccatagacg atcttcagca 20
 <210>5118
 <211>20
 <212>DNA
 <400>5118
 cgatcagctt gtccatcatc 20
 <210>5119
 <211>20
 <212>DNA
 <400>5119
 ccacgtacga gatcagatgt 20
 <210>5120
 <211>20
 <212>DNA
 <400>5120
 gctcgatgat gggatcctta 20

<210>5121
<211>20
<212>DNA
<400>5121
caactcctac aagtgatggg 20
<210>5122
<211>20
<212>DNA
<400>5122
ccgctctgct ttaggatagc 20
<210>5123
<211>20
<212>DNA
<400>5123
ggcagatgca aacagtaagg 20
<210>5124
<211>20
<212>DNA
<400>5124
gtgtaactct caaagcccac 20
<210>5125
<211>20
<212>DNA
<400>5125
ctcacgtcct cagaggggaa 20
<210>5126
<211>20
<212>DNA
<400>5126
cctgatgacg cttccttttg 20
<210>5127
<211>20
<212>DNA
<400>5127
cgttggtgcg ggatccaatg 20
<210>5128
<211>20
<212>DNA
<400>5128
gctccaaatt tcgaacctcc 20
<210>5129
<211>20
<212>DNA
<400>5129
cccatatgca gggactctaa 20
<210>5130
<211>20
<212>DNA
<400>5130
gcgatattca gggcgtgttt 20
<210>5131
<211>20
<212>DNA
<400>5131
ccaggtagcg tatccaaaag 20
<210>5132
<211>20
<212>DNA
<400>5132
agaccgctaa ctttcattcg 20
<210>5133
<211>20
<212>DNA
<400>5133

gcaccacctc tgttggtgct 20
 <210>5134
 <211>20
 <212>DNA
 <400>5134
 ttcagccgca cggtaatgac 20
 <210>5135
 <211>20
 <212>DNA
 <400>5135
 ccttcgctag cgccttattt 20
 <210>5136
 <211>20
 <212>DNA
 <400>5136
 gacagtcgtt tggctgttga 20
 <210>5137
 <211>20
 <212>DNA
 <400>5137
 cggatgctac tatcatccag 20
 <210>5138
 <211>20
 <212>DNA
 <400>5138
 cccgcatagt gtaactccta 20
 <210>5139
 <211>20
 <212>DNA
 <400>5139
 gagcttgga aggtctccta 20
 <210>5140
 <211>20
 <212>DNA
 <400>5140
 catgacgagc aaaggagtag 20
 <210>5141
 <211>20
 <212>DNA
 <400>5141
 gtgagtctaa ggtatccagc 20
 <210>5142
 <211>20
 <212>DNA
 <400>5142
 cgatcgcaact aaacgtgctt 20
 <210>5143
 <211>20
 <212>DNA
 <400>5143
 catgctttga gctcggcaat 20
 <210>5144
 <211>20
 <212>DNA
 <400>5144
 gcgttcgcaa cttcttgagt 20
 <210>5145
 <211>20
 <212>DNA
 <400>5145
 gcatcggttg aaacagtgag 20
 <210>5146
 <211>20
 <212>DNA

<400>5146
cattgcttcc ataaccaggg 20
<210>5147
<211>20
<212>DNA
<400>5147
aaagcttcgg ggaagcgtag 20
<210>5148
<211>20
<212>DNA
<400>5148
aggctcttga ggaagctcag 20
<210>5149
<211>20
<212>DNA
<400>5149
gatgttcac cagggttcct 20
<210>5150
<211>20
<212>DNA
<400>5150
agcgctgtga ttcattggggc 20
<210>5151
<211>20
<212>DNA
<400>5151
gcctcctttt ggtctgcatt 20
<210>5152
<211>20
<212>DNA
<400>5152
gctctcgaag ctgaaatctt 20
<210>5153
<211>20
<212>DNA
<400>5153
ggagtgccag gacctgtatg 20
<210>5154
<211>20
<212>DNA
<400>5154
ggttgatagg agctgccata 20
<210>5155
<211>20
<212>DNA
<400>5155
ttcctgttcc cgttcccgtg 20
<210>5156
<211>20
<212>DNA
<400>5156
caatccgagt ggatgggttc 20
<210>5157
<211>20
<212>DNA
<400>5157
gtagaacctg gaagcgtaact 20
<210>5158
<211>20
<212>DNA
<400>5158
gtcaggggtgc gacttgtagt 20
<210>5159
<211>20

<212>DNA
 <400>5159
 ccttctggag tcgttggttc 20
 <210>5160
 <211>20
 <212>DNA
 <400>5160
 cctaagtttc aggacctcgt 20
 <210>5161
 <211>20
 <212>DNA
 <400>5161
 agcgatgctc gacggcgagc 20
 <210>5162
 <211>20
 <212>DNA
 <400>5162
 cgttctttag atcggcagga 20
 <210>5163
 <211>20
 <212>DNA
 <400>5163
 gaggtctctt tgacctcgat 20
 <210>5164
 <211>20
 <212>DNA
 <400>5164
 ccatcatgcg ctgatttcca 20
 <210>5165
 <211>20
 <212>DNA
 <400>5165
 ctagagccaa agactttggc 20
 <210>5166
 <211>20
 <212>DNA
 <400>5166
 ccttctggag tcgttggttc 20
 <210>5167
 <211>20
 <212>DNA
 <400>5167
 gcaaaggagg tcaccacaaa 20
 <210>5168
 <211>20
 <212>DNA
 <400>5168
 gacgaaacat caatgggcct 20
 <210>5169
 <211>20
 <212>DNA
 <400>5169
 ttgtctagcg aacagatccc 20
 <210>5170
 <211>20
 <212>DNA
 <400>5170
 cgtcaagggg agtcctttaga 20
 <210>5171
 <211>20
 <212>DNA
 <400>5171
 aaaaggacgt gtcctatcgt 20
 <210>5172

<211>20
<212>DNA
<400>5172
caagaatagg aaggggtggct 20
<210>5173
<211>20
<212>DNA
<400>5173
ggtaagatag cgtgcatgga 20
<210>5174
<211>20
<212>DNA
<400>5174
gcgacgctct ccaggaatgg 20
<210>5175
<211>20
<212>DNA
<400>5175
cgggtggagat ccgtaaaatc 20
<210>5176
<211>20
<212>DNA
<400>5176
gcgtttgcaa atagagggtg 20
<210>5177
<211>20
<212>DNA
<400>5177
tgcgagccga gatcttggtg 20
<210>5178
<211>20
<212>DNA
<400>5178
tctgggtcac ccgagaaaat 20
<210>5179
<211>20
<212>DNA
<400>5179
gggagaacat cggtaaagga 20
<210>5180
<211>20
<212>DNA
<400>5180
caaggaaaag gcccttcttc 20
<210>5181
<211>20
<212>DNA
<400>5181
gggtgccgct gctcctactg 20
<210>5182
<211>20
<212>DNA
<400>5182
tagagaaccc cttcgggagt 20
<210>5183
<211>20
<212>DNA
<400>5183
ccaaaccatt tccctctctc 20
<210>5184
<211>20
<212>DNA
<400>5184
gggagaacat cggtaaagga 20

<210>5185
<211>20
<212>DNA
<400>5185
gagaaggctt ggcgtaagca 20
<210>5186
<211>20
<212>DNA
<400>5186
ggctcagaga aaatgctgtg 20
<210>5187
<211>20
<212>DNA
<400>5187
cccctggatg gattcatttt 20
<210>5188
<211>20
<212>DNA
<400>5188
ctgagactta ctgggattgc 20
<210>5189
<211>20
<212>DNA
<400>5189
caggaattgc tgcgcagtta 20
<210>5190
<211>20
<212>DNA
<400>5190
tatcgctcga cggcccatct 20
<210>5191
<211>20
<212>DNA
<400>5191
caagctaaag cgagcatgtc 20
<210>5192
<211>20
<212>DNA
<400>5192
gtgaggtaag aagttccgag 20
<210>5193
<211>20
<212>DNA
<400>5193
tctagctggc ggatagcctc 20
<210>5194
<211>20
<212>DNA
<400>5194
gggttacgtg atgctttagg 20
<210>5195
<211>20
<212>DNA
<400>5195
cctcttgtag cgagtcaaac 20
<210>5196
<211>20
<212>DNA
<400>5196
cctttacgca taagcagagg 20
<210>5197
<211>20
<212>DNA
<400>5197

gtgatgtccc cctcccttat 20
<210>5198
<211>20
<212>DNA
<400>5198
ggtcagttta ggaaggcgtg 20
<210>5199
<211>20
<212>DNA
<400>5199
tttaccgatt gcgccagacc 20
<210>5200
<211>20
<212>DNA
<400>5200
gggttgggt gtatggaata 20
<210>5201
<211>20
<212>DNA
<400>5201
ggacggggat tctttatggt 20
<210>5202
<211>20
<212>DNA
<400>5202
gtaggcagtg caacgcataa 20
<210>5203
<211>20
<212>DNA
<400>5203
ctcaagcatc tttggacgac 20
<210>5204
<211>20
<212>DNA
<400>5204
ctaagagagg ggagataagc 20
<210>5205
<211>20
<212>DNA
<400>5205
agtgacgtgg cagatttctc 20
<210>5206
<211>20
<212>DNA
<400>5206
gcattaggat ggggaatcgt 20
<210>5207
<211>20
<212>DNA
<400>5207
aggtctaagt tgagttctgc 20
<210>5208
<211>20
<212>DNA
<400>5208
tgaaggaggc ctccagaata 20
<210>5209
<211>20
<212>DNA
<400>5209
gctttggtag tcgcaggtat 20
<210>5210
<211>20
<212>DNA

<400>5210
ggcatagcga gaacaccata 20
<210>5211
<211>20
<212>DNA
<400>5211
cctggcatgg agagatcttt 20
<210>5212
<211>20
<212>DNA
<400>5212
tgaggcaggg ctgacctttt 20
<210>5213
<211>20
<212>DNA
<400>5213
gcacagtcac gattaagtcg 20
<210>5214
<211>20
<212>DNA
<400>5214
cctttactag tcacctggca 20
<210>5215
<211>20
<212>DNA
<400>5215
ggttcagcga atgttgtagg 20
<210>5216
<211>20
<212>DNA
<400>5216
cagactcagc tacgaatacg 20
<210>5217
<211>20
<212>DNA
<400>5217
cggagggaga gtggtcacat 20
<210>5218
<211>20
<212>DNA
<400>5218
ccatgtttgc agccagtga 20
<210>5219
<211>20
<212>DNA
<400>5219
gggaaaacag tcattccagc 20
<210>5220
<211>20
<212>DNA
<400>5220
acgcacaact cgcttatagc 20
<210>5221
<211>20
<212>DNA
<400>5221
agcggtatcg tcttccctaa 20
<210>5222
<211>20
<212>DNA
<400>5222
gcctatgcag tactctggga 20
<210>5223
<211>20

```

<212>DNA
<400>5223
cctccgatga agagattgct      20
<210>5224
<211>20
<212>DNA
<400>5224
cgctcttcta gctcctgtaa      20
<210>5225
<211>20
<212>DNA
<400>5225
gatattgttc tcctcccagg      20
<210>5226
<211>20
<212>DNA
<400>5226
ggcgaagaag aaaacttggg      20
<210>5227
<211>20
<212>DNA
<400>5227
taatgggtat tgggccgaca      20
<210>5228
<211>20
<212>DNA
<400>5228
gagcttttgc tgcccttcct      20
<210>5229
<211>20
<212>DNA
<400>5229
cggaggcctc aaattttgag      20
<210>5230
<211>20
<212>DNA
<400>5230
gggaaagact gtgagattcg      20
<210>5231
<211>20
<212>DNA
<400>5231
cgggtcaagct gtagcaattc      20
<210>5232
<211>20
<212>DNA
<400>5232
gggcaaaagg ttatctcctc      20
<210>5233
<211>20
<212>DNA
<400>5233
cacacgcgat tgctgtgaat      20
<210>5234
<211>20
<212>DNA
<400>5234
cacttggtcc acagggaata      20
<210>5235
<211>20
<212>DNA
<400>5235
ctccagctca gattcgtaga      20
<210>5236

```

<211>20
<212>DNA
<400>5236
tggcgtgctt cctatgagta 20
<210>5237
<211>20
<212>DNA
<400>5237
caagccatag cagccaaagt 20
<210>5238
<211>20
<212>DNA
<400>5238
gaacctaccc cgctattgat 20
<210>5239
<211>20
<212>DNA
<400>5239
actagtgaga gagaagatgg 20
<210>5240
<211>20
<212>DNA
<400>5240
gtggtttgat tcagtgatcc 20
<210>5241
<211>20
<212>DNA
<400>5241
ggcacgaaga tactccctat 20
<210>5242
<211>20
<212>DNA
<400>5242
ccacgatgtt aggtcgagaa 20
<210>5243
<211>20
<212>DNA
<400>5243
gctgacgatg tgattgcaag 20
<210>5244
<211>20
<212>DNA
<400>5244
gaaggccaaa caagaaggct 20
<210>5245
<211>20
<212>DNA
<400>5245
tgtgattcct ggcactctgt 20
<210>5246
<211>20
<212>DNA
<400>5246
ctgatgctgt agcaaccttg 20
<210>5247
<211>20
<212>DNA
<400>5247
gggcaagatc ttacagtag 20
<210>5248
<211>20
<212>DNA
<400>5248
cgtggctctc ggttttctat 20

<210>5249
<211>20
<212>DNA
<400>5249
cttcg gatcg agagcaa atc 20
<210>5250
<211>20
<212>DNA
<400>5250
ccctctcttt ccgaataacc 20
<210>5251
<211>20
<212>DNA
<400>5251
gttcaatagg atgcagacgc 20
<210>5252
<211>20
<212>DNA
<400>5252
cgtatcgatt tgacatcccc 20
<210>5253
<211>20
<212>DNA
<400>5253
atgcccgata ttctcgatgc 20
<210>5254
<211>20
<212>DNA
<400>5254
cgtccccct ccactatagc 20
<210>5255
<211>20
<212>DNA
<400>5255
gctatggtcc tagaaacgca 20
<210>5256
<211>20
<212>DNA
<400>5256
caaatectgc agaagctgct 20
<210>5257
<211>20
<212>DNA
<400>5257
cagagatcaa ccgtttgaag 20
<210>5258
<211>20
<212>DNA
<400>5258
ggcattcagg ctttagcagc 20
<210>5259
<211>20
<212>DNA
<400>5259
gtctgtagca gaatgagtgg 20
<210>5260
<211>20
<212>DNA
<400>5260
gctcagcgtg atatcctcat 20
<210>5261
<211>20
<212>DNA
<400>5261

gctatcggca gatgatgcta 20
 <210>5262
 <211>20
 <212>DNA
 <400>5262
 gagaaaggta tggctatgcc 20
 <210>5263
 <211>20
 <212>DNA
 <400>5263
 gaggttatgg aagtccgtga 20
 <210>5264
 <211>20
 <212>DNA
 <400>5264
 gtcttttcgt gctcagatgg 20
 <210>5265
 <211>20
 <212>DNA
 <400>5265
 ttcgactcta cacatggacg 20
 <210>5266
 <211>20
 <212>DNA
 <400>5266
 gacttgaccg tcaggtaga 20
 <210>5267
 <211>20
 <212>DNA
 <400>5267
 cagttggaag tcgatctacg 20
 <210>5268
 <211>20
 <212>DNA
 <400>5268
 gacaagctaa aggtggagac 20
 <210>5269
 <211>20
 <212>DNA
 <400>5269
 cgaggtcaga gacatagact 20
 <210>5270
 <211>20
 <212>DNA
 <400>5270
 gagactattg gcgaacttgt 20
 <210>5271
 <211>20
 <212>DNA
 <400>5271
 cgggtactgca atgcttatcg 20
 <210>5272
 <211>20
 <212>DNA
 <400>5272
 cgtgctttga tatctgctgg 20
 <210>5273
 <211>20
 <212>DNA
 <400>5273
 ctgggtgtgg ttccttacat 20
 <210>5274
 <211>20
 <212>DNA

<400>5274
gcatcagcag gtaaagtagg 20
<210>5275
<211>20
<212>DNA
<400>5275
ttacggcctg tagagtgggt 20
<210>5276
<211>20
<212>DNA
<400>5276
cgactgaact ctctgctaca 20
<210>5277
<211>20
<212>DNA
<400>5277
agggggagga gttcctttat 20
<210>5278
<211>20
<212>DNA
<400>5278
tgtctgcttc gtgtggattc 20
<210>5279
<211>20
<212>DNA
<400>5279
gaagttcttg tccatcacga 20
<210>5280
<211>20
<212>DNA
<400>5280
gaagagttcc tacaagaggg 20
<210>5281
<211>20
<212>DNA
<400>5281
cgcgctatgc gtgtgttttt 20
<210>5282
<211>20
<212>DNA
<400>5282
catcacgatg gagcacagtt 20
<210>5283
<211>20
<212>DNA
<400>5283
cccttcgtgg aattcgtatg 20
<210>5284
<211>20
<212>DNA
<400>5284
cttcccgttt ccactctatc 20
<210>5285
<211>20
<212>DNA
<400>5285
cgaaggtgta aacgttcgca 20
<210>5286
<211>20
<212>DNA
<400>5286
ggctcgagaa cctattctac 20
<210>5287
<211>20

```

<212>DNA
<400>5287
cggttggttcga gtagaaagga 20
<210>5288
<211>20
<212>DNA
<400>5288
cgcgctatgc gtgtgttttt 20
<210>5289
<211>20
<212>DNA
<400>5289
cgacgacgat ttagatgcgt 20
<210>5290
<211>20
<212>DNA
<400>5290
cgacttccgc ggatttttcta 20
<210>5291
<211>20
<212>DNA
<400>5291
gcaggattaa gtaagggagc 20
<210>5292
<211>20
<212>DNA
<400>5292
cgaagggtgta aacgttcgca 20
<210>5293
<211>20
<212>DNA
<400>5293
gtcctggggtt ggtaattgga 20
<210>5294
<211>20
<212>DNA
<400>5294
gggagacgtt atcaaagctg 20
<210>5295
<211>20
<212>DNA
<400>5295
gccgggcctg tctacaagcg 20
<210>5296
<211>20
<212>DNA
<400>5296
ggtgttggtg tctcggcaaa 20
<210>5297
<211>20
<212>DNA
<400>5297
gatgatcggc catacgtttg 20
<210>5298
<211>20
<212>DNA
<400>5298
gttaagcgag tggaaagggt 20
<210>5299
<211>20
<212>DNA
<400>5299
gaaccctgta gatcatcccc 20
<210>5300

```

<211>20
<212>DNA
<400>5300
ccgagattgc tcgttctgaa 20
<210>5301
<211>20
<212>DNA
<400>5301
gtggtgagtt gcgcggtacg 20
<210>5302
<211>20
<212>DNA
<400>5302
ggaacagctg ggattttctc 20
<210>5303
<211>20
<212>DNA
<400>5303
ctcctaaaac tcagtcagcg 20
<210>5304
<211>20
<212>DNA
<400>5304
gtttgttgat caccacctcc 20
<210>5305
<211>20
<212>DNA
<400>5305
gcgaagttga agtagcagac 20
<210>5306
<211>20
<212>DNA
<400>5306
gtgtagatgg caaagctgga 20
<210>5307
<211>20
<212>DNA
<400>5307
ctcctggtcg ttgtttccct 20
<210>5308
<211>20
<212>DNA
<400>5308
ggagagggaa agaaaaaggg 20
<210>5309
<211>20
<212>DNA
<400>5309
ttgctccgct gcaatttctg 20
<210>5310
<211>20
<212>DNA
<400>5310
gcaatgttga gtgtcgtagc 20
<210>5311
<211>20
<212>DNA
<400>5311
cattcggtgt tttagctccg 20
<210>5312
<211>20
<212>DNA
<400>5312
gcgatcgact cctggtcggt 20

<210>5313
<211>20
<212>DNA
<400>5313
gcaagggttc tacgaactca 20
<210>5314
<211>20
<212>DNA
<400>5314
ggcagaaaac aaagtctggc 20
<210>5315
<211>20
<212>DNA
<400>5315
agtaaagcgt cagaccccca 20
<210>5316
<211>20
<212>DNA
<400>5316
cattcggtgt tttacgtccg 20
<210>5317
<211>20
<212>DNA
<400>5317
accattggaa gtggaaaccc 20
<210>5318
<211>20
<212>DNA
<400>5318
aggagccat ttgcttgac 20
<210>5319
<211>20
<212>DNA
<400>5319
ctgctggtgt attgataggc 20
<210>5320
<211>20
<212>DNA
<400>5320
tttgctacgc gattagccct 20
<210>5321
<211>20
<212>DNA
<400>5321
cgctattctg gagtgggaat 20
<210>5322
<211>20
<212>DNA
<400>5322
ctgctggtgt attgataggc 20
<210>5323
<211>20
<212>DNA
<400>5323
cttcccgaag gtaaggcatt 20
<210>5324
<211>20
<212>DNA
<400>5324
gggggatgtt tggataatgc 20
<210>5325
<211>20
<212>DNA
<400>5325

cgctatcgag atgcttcgat 20
<210>5326
<211>20
<212>DNA
<400>5326
cagtctgcct caggtaacta 20
<210>5327
<211>20
<212>DNA
<400>5327
acaaccagcc cattcctgtc 20
<210>5328
<211>20
<212>DNA
<400>5328
actgtggatt ctctaggctg 20
<210>5329
<211>20
<212>DNA
<400>5329
aaaccctgtc cgttttagctg 20
<210>5330
<211>20
<212>DNA
<400>5330
tacttccta gaagtcgggg 20
<210>5331
<211>20
<212>DNA
<400>5331
gaccctggaa gaagtgc aaa 20
<210>5332
<211>20
<212>DNA
<400>5332
gcctatcttc aatgggcatc 20
<210>5333
<211>20
<212>DNA
<400>5333
cttttctatc tggaacaggc 20
<210>5334
<211>20
<212>DNA
<400>5334
gcctaagcca cgattttgtg 20
<210>5335
<211>20
<212>DNA
<400>5335
tgcgcattcc catgcaaaa 20
<210>5336
<211>20
<212>DNA
<400>5336
cagtcccacc aaaagaacct 20
<210>5337
<211>20
<212>DNA
<400>5337
agggttcctt catcaatggc 20
<210>5338
<211>20
<212>DNA

<400>5338
cgtgaggttaa gacaacccat 20
<210>5339
<211>20
<212>DNA
<400>5339
catgtagcat agtcggtgcc 20
<210>5340
<211>20
<212>DNA
<400>5340
cttgccatct tcaggcacct 20
<210>5341
<211>20
<212>DNA
<400>5341
cggaggtacg atcaaagggt 20
<210>5342
<211>20
<212>DNA
<400>5342
gagcctatct tgcttcctct 20
<210>5343
<211>20
<212>DNA
<400>5343
ggatgctcaa ggattcacag 20
<210>5344
<211>20
<212>DNA
<400>5344
gggattgcct taggggttaga 20
<210>5345
<211>20
<212>DNA
<400>5345
gctcaaaagc gtattgagcc 20
<210>5346
<211>20
<212>DNA
<400>5346
gaatgggtcgc aacatttgcg 20
<210>5347
<211>20
<212>DNA
<400>5347
taatgtgctt tggagggttg 20
<210>5348
<211>20
<212>DNA
<400>5348
gcgcggtttt tctccaatac 20
<210>5349
<211>20
<212>DNA
<400>5349
aagctatgga tgcacaggct 20
<210>5350
<211>20
<212>DNA
<400>5350
gaaaaaccct ttccaccccc 20
<210>5351
<211>20

```

<212>DNA
<400>5351
actctccacg ggtttcatag      20
<210>5352
<211>20
<212>DNA
<400>5352
acactcgcaa ccaatgatgg      20
<210>5353
<211>20
<212>DNA
<400>5353
ctttgccatg cttgcggtta      20
<210>5354
<211>20
<212>DNA
<400>5354
cgaagatcgt gtgcgtcatt      20
<210>5355
<211>20
<212>DNA
<400>5355
gcatgacgaa agtgctagag      20
<210>5356
<211>20
<212>DNA
<400>5356
caaaacgctg ggtggaaagc      20
<210>5357
<211>20
<212>DNA
<400>5357
ctctgcgttc ttccgcttt      20
<210>5358
<211>20
<212>DNA
<400>5358
ggatggtttag gatgctgctt      20
<210>5359
<211>20
<212>DNA
<400>5359
ggaaagagag tcctgcatgt      20
<210>5360
<211>20
<212>DNA
<400>5360
gaactccttc cagagatagc      20
<210>5361
<211>20
<212>DNA
<400>5361
gatgatgtaa cccatgggga      20
<210>5362
<211>20
<212>DNA
<400>5362
ttctaagtct cctctatggg      20
<210>5363
<211>20
<212>DNA
<400>5363
acaaggggca tagaaaggct      20
<210>5364

```

<211>20
<212>DNA
<400>5364
tttggctcgt tcctgagctt 20
<210>5365
<211>20
<212>DNA
<400>5365
cgatcctggt cccctgaaaa 20
<210>5366
<211>20
<212>DNA
<400>5366
aataccttcc cagagtcggc 20
<210>5367
<211>20
<212>DNA
<400>5367
gcgagtgcga aagagcatct 20
<210>5368
<211>20
<212>DNA
<400>5368
gtggtatgct tttccttctg 20
<210>5369
<211>20
<212>DNA
<400>5369
gccgaggatt tccaaacgat 20
<210>5370
<211>20
<212>DNA
<400>5370
cgccctgtgg gataaaatga 20
<210>5371
<211>20
<212>DNA
<400>5371
ctgcggaacc tccatacttt 20
<210>5372
<211>20
<212>DNA
<400>5372
aagactatcg ctcgcatccc 20
<210>5373
<211>20
<212>DNA
<400>5373
cacctcaacc tcctacggcg 20
<210>5374
<211>20
<212>DNA
<400>5374
gaagctgcag ttgcatttgc 20
<210>5375
<211>20
<212>DNA
<400>5375
cttacagagg tagtacgcac 20
<210>5376
<211>20
<212>DNA
<400>5376
gagaactcgg tgcggctgta 20

<210>5377
<211>20
<212>DNA
<400>5377
ctccctgaac tttagatggt 20
<210>5378
<211>20
<212>DNA
<400>5378
ctcaggcctg tctctctaag 20
<210>5379
<211>20
<212>DNA
<400>5379
ccgcagaact ctcttcctac 20
<210>5380
<211>20
<212>DNA
<400>5380
cccaggcttt ggtctatctt 20
<210>5381
<211>20
<212>DNA
<400>5381
cgaggcggaa attatggaag 20
<210>5382
<211>20
<212>DNA
<400>5382
ggatgggctc agcattaaca 20
<210>5383
<211>20
<212>DNA
<400>5383
tgggggtactg ttggcggtgt 20
<210>5384
<211>20
<212>DNA
<400>5384
ccataccaag cactgttcct 20
<210>5385
<211>20
<212>DNA
<400>5385
agagagttgg tgggggtaga 20
<210>5386
<211>20
<212>DNA
<400>5386
ggcagataaa gcacgcttgc 20
<210>5387
<211>20
<212>DNA
<400>5387
ctcctcagat aaccctacca 20
<210>5388
<211>20
<212>DNA
<400>5388
taagaaccca gaggtgagag 20
<210>5389
<211>20
<212>DNA
<400>5389

cctgtacgtc caggatttca 20
<210>5390
<211>20
<212>DNA
<400>5390
ccgtaagtaa gttgtggcct 20
<210>5391
<211>20
<212>DNA
<400>5391
ctaggctaag agcgtcttct 20
<210>5392
<211>20
<212>DNA
<400>5392
gagcgccatg gcaatgcaaa 20
<210>5393
<211>20
<212>DNA
<400>5393
tcgatagagt tgaagcccac 20
<210>5394
<211>20
<212>DNA
<400>5394
ctaggctaag agcgtcttct 20
<210>5395
<211>20
<212>DNA
<400>5395
cgatcacacg tagtaggggt 20
<210>5396
<211>20
<212>DNA
<400>5396
cctgtacgtc caggatttca 20
<210>5397
<211>20
<212>DNA
<400>5397
ggaaagaata ggggtagtga 20
<210>5398
<211>20
<212>DNA
<400>5398
ggaagctcta cccgtcgtta 20
<210>5399
<211>20
<212>DNA
<400>5399
cgtctgcat aggatcttct 20
<210>5400
<211>20
<212>DNA
<400>5400
aactgggaac gagagtggga 20
<210>5401
<211>20
<212>DNA
<400>5401
gcaaaagaga acgagccttt 20
<210>5402
<211>20
<212>DNA

<400>5402
cccaccccttt ggatctaggt 20
<210>5403
<211>20
<212>DNA
<400>5403
tcctgaagag atgcagacga 20
<210>5404
<211>20
<212>DNA
<400>5404
ggtgatagat gccgttgcta 20
<210>5405
<211>20
<212>DNA
<400>5405
ccagagattc ctggagtcaa 20
<210>5406
<211>20
<212>DNA
<400>5406
gatagaaaca gacgaggtga 20
<210>5407
<211>20
<212>DNA
<400>5407
gatccatggg ttttgtcggg 20
<210>5408
<211>20
<212>DNA
<400>5408
tcttggagaa ataccgagag 20
<210>5409
<211>20
<212>DNA
<400>5409
gctgctctac gtaatgaacc 20
<210>5410
<211>20
<212>DNA
<400>5410
gcctatacgg atccgaagat 20
<210>5411
<211>20
<212>DNA
<400>5411
cgacctgatt tgtctgatgg 20
<210>5412
<211>20
<212>DNA
<400>5412
gcatgtaagc gccttagtgt 20
<210>5413
<211>20
<212>DNA
<400>5413
gatgtctagc aacccgtact 20
<210>5414
<211>20
<212>DNA
<400>5414
gactggatcg ggaatatggg 20
<210>5415
<211>20

<212>DNA
<400>5415
gcggaagatt ctaaagcgg 20
<210>5416
<211>20
<212>DNA
<400>5416
ggaggagcca ttattgcgtt 20
<210>5417
<211>20
<212>DNA
<400>5417
ggtcgaaaac atagtctccg 20
<210>5418
<211>20
<212>DNA
<400>5418
caagaaagcg tggcttcaga 20
<210>5419
<211>20
<212>DNA
<400>5419
caacgccttt atagcccttg 20
<210>5420
<211>20
<212>DNA
<400>5420
cctcactacc ttctcaagtc 20
<210>5421
<211>20
<212>DNA
<400>5421
gggattccaa gctttgtacc 20
<210>5422
<211>20
<212>DNA
<400>5422
cgcaaactgg attaaggggt 20
<210>5423
<211>20
<212>DNA
<400>5423
ccagtcggga taaacgcatt 20
<210>5424
<211>20
<212>DNA
<400>5424
attaatgcag tgccgttggc 20
<210>5425
<211>20
<212>DNA
<400>5425
cagagggaaa agaaaaaccc 20
<210>5426
<211>20
<212>DNA
<400>5426
cccatttgat ctgccgatac 20
<210>5427
<211>20
<212>DNA
<400>5427
tgatctcgga ttactgctgc 20
<210>5428

<211>20
<212>DNA
<400>5428
cttcgacttc aggctgtaag 20
<210>5429
<211>20
<212>DNA
<400>5429
gagcttgga gcagtaatcc 20
<210>5430
<211>20
<212>DNA
<400>5430
ctaaccgctg agctaaagac 20
<210>5431
<211>20
<212>DNA
<400>5431
gtaagagtcg gccgtataac 20
<210>5432
<211>20
<212>DNA
<400>5432
ggggagtgtc ttttagagga 20
<210>5433
<211>20
<212>DNA
<400>5433
atcctgggttc gatccctctt 20
<210>5434
<211>20
<212>DNA
<400>5434
gccgtggaat agcttctgac 20
<210>5435
<211>20
<212>DNA
<400>5435
tgtcacgatc gtttcccacg 20
<210>5436
<211>20
<212>DNA
<400>5436
gagttgttgc agttcgtaag 20
<210>5437
<211>20
<212>DNA
<400>5437
ctcatcactc ctcagggtaa 20
<210>5438
<211>20
<212>DNA
<400>5438
cttttcccca ggattaggga 20
<210>5439
<211>20
<212>DNA
<400>5439
cgtagatatt tctctgcgcc 20
<210>5440
<211>20
<212>DNA
<400>5440
ccctcaacgc tcattagctt 20

<210>5441
<211>20
<212>DNA
<400>5441
tcctgaaacc gaagaaagcg 20
<210>5442
<211>20
<212>DNA
<400>5442
ccctggatac agtagactcg 20
<210>5443
<211>20
<212>DNA
<400>5443
gaagagaaaa cacgactcca 20
<210>5444
<211>20
<212>DNA
<400>5444
gctgcagacc ttgtaacgaa 20
<210>5445
<211>20
<212>DNA
<400>5445
gccgacgtta atgtaatcgc 20
<210>5446
<211>20
<212>DNA
<400>5446
gcagtacagc tttcggaga 20
<210>5447
<211>20
<212>DNA
<400>5447
cacacacaac aagatgctcg 20
<210>5448
<211>20
<212>DNA
<400>5448
cggatcatag ggaaagcaag 20
<210>5449
<211>20
<212>DNA
<400>5449
gagctcttgc tcaatctgtc 20
<210>5450
<211>20
<212>DNA
<400>5450
gagggttcgg taactaggaa 20
<210>5451
<211>20
<212>DNA
<400>5451
gccatcttct tcaaggaggt 20
<210>5452
<211>20
<212>DNA
<400>5452
cagtgcgctg ataaaaggca 20
<210>5453
<211>20
<212>DNA
<400>5453

gttgtggctt taggaacgac 20
<210>5454
<211>20
<212>DNA
<400>5454
cggcgtatgt acttacgtga 20
<210>5455
<211>20
<212>DNA
<400>5455
gacacggcaa gtgaccatac 20
<210>5456
<211>20
<212>DNA
<400>5456
cgcgatcttt ttagagaagg 20
<210>5457
<211>20
<212>DNA
<400>5457
ccaaagtcag cagaaccctc 20
<210>5458
<211>20
<212>DNA
<400>5458
gctgtcttac tcccagctga 20
<210>5459
<211>20
<212>DNA
<400>5459
gcctcggcaa acttcggaaa 20
<210>5460
<211>20
<212>DNA
<400>5460
gatgcaaattg acgacacggc 20
<210>5461
<211>20
<212>DNA
<400>5461
gcaatgcacc aaagaaggag 20
<210>5462
<211>20
<212>DNA
<400>5462
caggggaagta gcgatccaat 20
<210>5463
<211>20
<212>DNA
<400>5463
ggacaggtaa aacgagccta 20
<210>5464
<211>20
<212>DNA
<400>5464
ctccatctgc tgatacagca 20
<210>5465
<211>20
<212>DNA
<400>5465
actccccgag gagctcaaaa 20
<210>5466
<211>20
<212>DNA

<400>5466
catcgcttga catatacagc 20
<210>5467
<211>20
<212>DNA
<400>5467
cagccctaca gagaaatgga 20
<210>5468
<211>20
<212>DNA
<400>5468
ggcctgcctt cttcattgat 20
<210>5469
<211>20
<212>DNA
<400>5469
gcctgcatct tttcttgctc 20
<210>5470
<211>20
<212>DNA
<400>5470
gagcgtagtc gttttgtttc 20
<210>5471
<211>20
<212>DNA
<400>5471
gagcttttgg agtctctggt 20
<210>5472
<211>20
<212>DNA
<400>5472
gatgcctaga gcagttgcta 20
<210>5473
<211>20
<212>DNA
<400>5473
ccatacgtac tacaatgggt 20
<210>5474
<211>20
<212>DNA
<400>5474
aacaataggg gcatcgccat 20
<210>5475
<211>20
<212>DNA
<400>5475
ggcgcaataa aggtcggttca 20
<210>5476
<211>20
<212>DNA
<400>5476
ggaccctcga aggtaggagt 20
<210>5477
<211>20
<212>DNA
<400>5477
ggcgggtccac tagattctta 20
<210>5478
<211>20
<212>DNA
<400>5478
cagttaagga tctagcgatt 20
<210>5479
<211>20

<212>DNA
<400>5479
ggactgtaat ttccctgcga 20
<210>5480
<211>20
<212>DNA
<400>5480
ctttgccaat gatcttcccg 20
<210>5481
<211>20
<212>DNA
<400>5481
catttgtcac gggcttcttg 20
<210>5482
<211>20
<212>DNA
<400>5482
ctttgctcgc ttctgtgctc 20
<210>5483
<211>20
<212>DNA
<400>5483
ggcaggaacc tagttgcaaa 20
<210>5484
<211>20
<212>DNA
<400>5484
ccgggtgagg tattctttac 20
<210>5485
<211>20
<212>DNA
<400>5485
ctctctgatg acgaacctct 20
<210>5486
<211>20
<212>DNA
<400>5486
gtgcacgatg gtccatagtt 20
<210>5487
<211>20
<212>DNA
<400>5487
tagtgtccgg gttagtagga 20
<210>5488
<211>20
<212>DNA
<400>5488
gcgctaccct ggatatcaaa 20
<210>5489
<211>20
<212>DNA
<400>5489
cgaatctacg gcacgaagtt 20
<210>5490
<211>20
<212>DNA
<400>5490
gcggagatgt tggcatgttt 20
<210>5491
<211>20
<212>DNA
<400>5491
cagttggcag gcaaatatgg 20
<210>5492

<211>20
<212>DNA
<400>5492
cagaccagca atcttttgcg 20
<210>5493
<211>20
<212>DNA
<400>5493
ccactatcat ggcctcagtt 20
<210>5494
<211>20
<212>DNA
<400>5494
gcggcttttag gatcctttga 20
<210>5495
<211>20
<212>DNA
<400>5495
gctgaatcgc gttctcattc 20
<210>5496
<211>20
<212>DNA
<400>5496
gtccagcttg atgattcgag 20
<210>5497
<211>20
<212>DNA
<400>5497
cgctgcgagg ttattgaagt 20
<210>5498
<211>20
<212>DNA
<400>5498
gcccctggaa gagagttaat 20
<210>5499
<211>20
<212>DNA
<400>5499
gcaatcgcta ctgctaagac 20
<210>5500
<211>20
<212>DNA
<400>5500
ggccttacca acacactaga 20
<210>5501
<211>20
<212>DNA
<400>5501
tagagcgatg gagcatcttg 20
<210>5502
<211>20
<212>DNA
<400>5502
ctgaaaatga gaccgcttcc 20
<210>5503
<211>20
<212>DNA
<400>5503
ctcgagaact ttctaaggac 20
<210>5504
<211>20
<212>DNA
<400>5504
ggcatcacag attctctatc 20

<210>5505
<211>20
<212>DNA
<400>5505
cgtgtccttt atgaacacgg 20
<210>5506
<211>20
<212>DNA
<400>5506
ctccataacg gctcaagcaa 20
<210>5507
<211>20
<212>DNA
<400>5507
gctgctcatt tcttgaggct 20
<210>5508
<211>20
<212>DNA
<400>5508
gcgctttgct tcaactgtgaa 20
<210>5509
<211>20
<212>DNA
<400>5509
ctgtatatca gtatggcggtt 20
<210>5510
<211>20
<212>DNA
<400>5510
gacaggtatc gtttacggtg 20
<210>5511
<211>20
<212>DNA
<400>5511
gctcgatatt gtggccctaa 20
<210>5512
<211>20
<212>DNA
<400>5512
gacgaaagtt ctctgccttc 20
<210>5513
<211>20
<212>DNA
<400>5513
ccgactcgga aatatgctga 20
<210>5514
<211>20
<212>DNA
<400>5514
gtggattatc cacacgagta 20
<210>5515
<211>20
<212>DNA
<400>5515
cccttggttta ttgggggatg 20
<210>5516
<211>20
<212>DNA
<400>5516
ccgactcgga aatatgctga 20
<210>5517
<211>20
<212>DNA
<400>5517

caccttggtg agtttcaaag 20
<210>5518
<211>20
<212>DNA
<400>5518
gagtcttgta ctcctttagg 20
<210>5519
<211>20
<212>DNA
<400>5519
tgccctgtag tagcatttgc 20
<210>5520
<211>20
<212>DNA
<400>5520
ctgaagcttg ctcgacaatg 20
<210>5521
<211>20
<212>DNA
<400>5521
gaattgcgct gccgatgata 20
<210>5522
<211>20
<212>DNA
<400>5522
gaggtctctt cgggagataa 20
<210>5523
<211>20
<212>DNA
<400>5523
gacatctgat ctagagtagc 20
<210>5524
<211>20
<212>DNA
<400>5524
gctgagagtt tagaaccgct 20
<210>5525
<211>20
<212>DNA
<400>5525
ctcgtgcaag caacgtacat 20
<210>5526
<211>20
<212>DNA
<400>5526
gtagtcttag cgcttctgag 20
<210>5527
<211>20
<212>DNA
<400>5527
ccaagctctc ctaagaggaa 20
<210>5528
<211>20
<212>DNA
<400>5528
ccacagctct tggttctcta 20
<210>5529
<211>20
<212>DNA
<400>5529
gtggaaagaa ctcgccatct 20
<210>5530
<211>20
<212>DNA

<400>5530
ggattctact ttagcgaggg 20
<210>5531
<211>20
<212>DNA
<400>5531
ccaacatttt ctccggatgc 20
<210>5532
<211>20
<212>DNA
<400>5532
cggtgggggtg tagaaattgt 20
<210>5533
<211>20
<212>DNA
<400>5533
ccctgagctg tttgtttggt 20
<210>5534
<211>20
<212>DNA
<400>5534
cgcagaacat gttaggggaag 20
<210>5535
<211>20
<212>DNA
<400>5535
cgtcgttcct ctttgggaaa 20
<210>5536
<211>20
<212>DNA
<400>5536
ctcttttgtc tagctcttgg 20
<210>5537
<211>20
<212>DNA
<400>5537
cagcctttca acaagggttg 20
<210>5538
<211>20
<212>DNA
<400>5538
gcctctcctt gctctacctt 20
<210>5539
<211>20
<212>DNA
<400>5539
cgcatctcct cacctatgtc 20
<210>5540
<211>20
<212>DNA
<400>5540
cctgcaggac tctatcttga 20
<210>5541
<211>20
<212>DNA
<400>5541
ggcacgaact tgagggatta 20
<210>5542
<211>20
<212>DNA
<400>5542
gatcacagtt tctacacaac 20
<210>5543
<211>20

<212>DNA
<400>5543
ggtcggttggg tcttttcgca 20
<210>5544
<211>20
<212>DNA
<400>5544
gcagatgcgg gtgttttaga 20
<210>5545
<211>20
<212>DNA
<400>5545
cgaggtcaag aacacgtaca 20
<210>5546
<211>20
<212>DNA
<400>5546
cggaagataa atccgcagag 20
<210>5547
<211>20
<212>DNA
<400>5547
gcgcatccaa tcgaagagta 20
<210>5548
<211>20
<212>DNA
<400>5548
tctaggtgct ggagtacgtt 20
<210>5549
<211>20
<212>DNA
<400>5549
gcgctcgagt tttctcttct 20
<210>5550
<211>20
<212>DNA
<400>5550
tcgcaacgtg gatgtccata 20
<210>5551
<211>20
<212>DNA
<400>5551
gggcaacaca ttgttttagcc 20
<210>5552
<211>20
<212>DNA
<400>5552
cccgccagaa gaaaaacacg 20
<210>5553
<211>20
<212>DNA
<400>5553
ccatccctac tttgattccg 20
<210>5554
<211>20
<212>DNA
<400>5554
gggatatcac ctgctgatgt 20
<210>5555
<211>20
<212>DNA
<400>5555
cagccctaac tatcacagga 20
<210>5556

```

<211>20
<212>DNA
<400>5556
cagaaccccc caagggccat      20
<210>5557
<211>20
<212>DNA
<400>5557
cgttaccacc ggaagaaagt      20
<210>5558
<211>20
<212>DNA
<400>5558
gcatggcttg gagatgtagt      20
<210>5559
<211>20
<212>DNA
<400>5559
ccaatgtaga tctgccgctt      20
<210>5560
<211>20
<212>DNA
<400>5560
gacttctgct gaaaaacgca      20
<210>5561
<211>20
<212>DNA
<400>5561
tggtcaattt gctccggagt      20
<210>5562
<211>20
<212>DNA
<400>5562
ctcttcatag ccataagttc      20
<210>5563
<211>20
<212>DNA
<400>5563
ccgctaataa aatagtgggc      20
<210>5564
<211>20
<212>DNA
<400>5564
gcaagagcaa caagctcttc      20
<210>5565
<211>20
<212>DNA
<400>5565
gccaggtgct ctattaaagc      20
<210>5566
<211>20
<212>DNA
<400>5566
gcatctgaaa gcttgtcgga      20
<210>5567
<211>20
<212>DNA
<400>5567
gctcaccacc accgattaaa      20
<210>5568
<211>20
<212>DNA
<400>5568
cctaccacct tctctatctg      20

```

<210>5569
<211>20
<212>DNA
<400>5569
cacggaaagc aaaacatccc 20
<210>5570
<211>20
<212>DNA
<400>5570
cgacgactgc tctatcaaca 20
<210>5571
<211>20
<212>DNA
<400>5571
gcagcgaata aaactccctc 20
<210>5572
<211>20
<212>DNA
<400>5572
cgctgaagga atgagtatcc 20
<210>5573
<211>20
<212>DNA
<400>5573
atcggatgatg tacacgtagg 20
<210>5574
<211>20
<212>DNA
<400>5574
ccagcttctt catccatgag 20
<210>5575
<211>20
<212>DNA
<400>5575
ggtccttgta ttctagtgtc 20
<210>5576
<211>20
<212>DNA
<400>5576
gcagcgaata aaactccctc 20
<210>5577
<211>20
<212>DNA
<400>5577
cggcaaacct ttgtcaact 20
<210>5578
<211>20
<212>DNA
<400>5578
ggtccttgta ttctagtgtc 20
<210>5579
<211>20
<212>DNA
<400>5579
ccatgagtcc catttatggg 20
<210>5580
<211>20
<212>DNA
<400>5580
ccgggttact gaccatttac 20
<210>5581
<211>20
<212>DNA
<400>5581

cttgggaaaa gcagccctc 20
<210>5582
<211>20
<212>DNA
<400>5582
gctcgtctgg aactgcgaac 20
<210>5583
<211>20
<212>DNA
<400>5583
gggacccaag aagcaaagat 20
<210>5584
<211>20
<212>DNA
<400>5584
ttgcccttgg gaaaagcagc 20
<210>5585
<211>20
<212>DNA
<400>5585
ccaataagct ctggcgtctt 20
<210>5586
<211>20
<212>DNA
<400>5586
cacacttggg aaccaactgg 20
<210>5587
<211>20
<212>DNA
<400>5587
cagcagaaaa agaagctgtc 20
<210>5588
<211>20
<212>DNA
<400>5588
ctccgttacc aaaaactggg 20
<210>5589
<211>20
<212>DNA
<400>5589
gatgacgcaa gatgctcacg 20
<210>5590
<211>20
<212>DNA
<400>5590
gggaaaagca aaaagctcgg 20
<210>5591
<211>20
<212>DNA
<400>5591
cttgaccgca ttgtgggata 20
<210>5592
<211>20
<212>DNA
<400>5592
gaaactaaga gcaccgactc 20
<210>5593
<211>20
<212>DNA
<400>5593
ctctctttat ccgaacttcg 20
<210>5594
<211>20
<212>DNA

<400>5594
tggtctacaa tggatccgcc 20
<210>5595
<211>20
<212>DNA
<400>5595
ctccttctac aagcgtaagg 20
<210>5596
<211>20
<212>DNA
<400>5596
cgcgatgaatt tgatgaccct 20
<210>5597
<211>20
<212>DNA
<400>5597
cctcagggtta aacagtatgc 20
<210>5598
<211>20
<212>DNA
<400>5598
cctcagggtta aacagtatgc 20
<210>5599
<211>20
<212>DNA
<400>5599
gtttctgtag gtgtggctcc 20
<210>5600
<211>20
<212>DNA
<400>5600
gggactagtg ttcgcaaaga 20
<210>5601
<211>20
<212>DNA
<400>5601
caggaatgag ctctatggat 20
<210>5602
<211>20
<212>DNA
<400>5602
gtctccccta atcaggagat 20
<210>5603
<211>20
<212>DNA
<400>5603
gcttctgcca tgaaaaggtc 20
<210>5604
<211>20
<212>DNA
<400>5604
cacaccctac gtaaggga 20
<210>5605
<211>20
<212>DNA
<400>5605
ggacgcgtta caaaataggg 20
<210>5606
<211>20
<212>DNA
<400>5606
acgttatacc ctcgagggtcc 20
<210>5607
<211>20

```

<212>DNA
<400>5607
ccgtaggaca cacgtaagta      20
<210>5608
<211>20
<212>DNA
<400>5608
ggtgcctatt ttcgctcaac      20
<210>5609
<211>20
<212>DNA
<400>5609
ggaatctctg cagatcgtct      20
<210>5610
<211>20
<212>DNA
<400>5610
cgagaagaag gctactgtgt      20
<210>5611
<211>20
<212>DNA
<400>5611
gccgtccgcg tctttatatt      20
<210>5612
<211>20
<212>DNA
<400>5612
cggatcctgt tcctgagaat      20
<210>5613
<211>20
<212>DNA
<400>5613
ctggaatcag tgctgggaaa      20
<210>5614
<211>20
<212>DNA
<400>5614
gcgattctca cgaacttggt      20
<210>5615
<211>20
<212>DNA
<400>5615
agcaactcaa gaagacgagc      20
<210>5616
<211>20
<212>DNA
<400>5616
ggagaggatt accaactcac      20
<210>5617
<211>20
<212>DNA
<400>5617
cacgtagccc tacagaattg      20
<210>5618
<211>20
<212>DNA
<400>5618
cctctaaagg gtatgtgcgt      20
<210>5619
<211>20
<212>DNA
<400>5619
ggtgctatca atgcggtttg      20
<210>5620

```



```

<211>20
<212>DNA
<400>5620
gggggtttcac gaacttcacg      20
<210>5621
<211>20
<212>DNA
<400>5621
caaaccatgc tttcgtagcg      20
<210>5622
<211>20
<212>DNA
<400>5622
ctgagcagcg aaaacgattc      20
<210>5623
<211>20
<212>DNA
<400>5623
gcagatcctg tttgaccaag      20
<210>5624
<211>20
<212>DNA
<400>5624
caacgatcag cttagctcct      20
<210>5625
<211>20
<212>DNA
<400>5625
gtcgtgacta gcgtagctaa      20
<210>5626
<211>20
<212>DNA
<400>5626
ccgcttggtc ctataacgaa      20
<210>5627
<211>20
<212>DNA
<400>5627
ctgctgaggt tcagcaaagt      20
<210>5628
<211>20
<212>DNA
<400>5628
ccagataacg ctgggaaaga      20
<210>5629
<211>20
<212>DNA
<400>5629
ggtccaatct gcctctaaag      20
<210>5630
<211>20
<212>DNA
<400>5630
cttctcttcg tagggcagtg      20
<210>5631
<211>20
<212>DNA
<400>5631
cattcagggc aagaattccc      20
<210>5632
<211>20
<212>DNA
<400>5632
aacacagcga actcccgaga      20

```

<210>5633
<211>20
<212>DNA
<400>5633
ttccaaaccg cactcactcc 20
<210>5634
<211>20
<212>DNA
<400>5634
cccgctaagg agtgaataca 20
<210>5635
<211>20
<212>DNA
<400>5635
aggaaccgta ttgggggtcct 20
<210>5636
<211>20
<212>DNA
<400>5636
ctgcaagaaa atccccacct 20
<210>5637
<211>20
<212>DNA
<400>5637
cgaggaactc cattcacaag 20
<210>5638
<211>20
<212>DNA
<400>5638
ggatccgcag acctcttcta 20
<210>5639
<211>20
<212>DNA
<400>5639
catggacgca cccatccgaa 20
<210>5640
<211>20
<212>DNA
<400>5640
cagacagtaa ctggccttct 20
<210>5641
<211>20
<212>DNA
<400>5641
cttggggatt ctgaagcaca 20
<210>5642
<211>20
<212>DNA
<400>5642
agagactcac caagctctac 20
<210>5643
<211>20
<212>DNA
<400>5643
cgagacttct tggctattcc 20
<210>5644
<211>20
<212>DNA
<400>5644
ccgaagttgc gaacatcact 20
<210>5645
<211>20
<212>DNA
<400>5645

cctccgctct ttttagtag 20
 <210>5646
 <211>20
 <212>DNA
 <400>5646
 ctccgctctt ttttagtaga 20
 <210>5647
 <211>20
 <212>DNA
 <400>5647
 gcgtgtgcct acatgtaaag 20
 <210>5648
 <211>20
 <212>DNA
 <400>5648
 gccgcaccta caatcacggt 20
 <210>5649
 <211>20
 <212>DNA
 <400>5649
 tctgcagaaa ctgccgatgc 20
 <210>5650
 <211>20
 <212>DNA
 <400>5650
 tgccaactgc catcagcaat 20
 <210>5651
 <211>20
 <212>DNA
 <400>5651
 gcatgagtct gagaatctgc 20
 <210>5652
 <211>20
 <212>DNA
 <400>5652
 tccgaggctc ttaccatacc 20
 <210>5653
 <211>20
 <212>DNA
 <400>5653
 ccatgaactt gggaacggta 20
 <210>5654
 <211>20
 <212>DNA
 <400>5654
 gatcctggaa ttgctgtcag 20
 <210>5655
 <211>20
 <212>DNA
 <400>5655
 gctactttgg cttactaagc 20
 <210>5656
 <211>20
 <212>DNA
 <400>5656
 cgtcaaatga cctagaacct 20
 <210>5657
 <211>20
 <212>DNA
 <400>5657
 tgttcaccgt ccttccagta 20
 <210>5658
 <211>20
 <212>DNA

<400>5658
tcctcctaga gtgccgagat 20
<210>5659
<211>20
<212>DNA
<400>5659
ggctgtcaaa tctgtagcga 20
<210>5660
<211>20
<212>DNA
<400>5660
gcgtctgtgt tgtaagaacg 20
<210>5661
<211>20
<212>DNA
<400>5661
ggggaaagac aactctctca 20
<210>5662
<211>20
<212>DNA
<400>5662
gtccacaaca gcaaatggga 20
<210>5663
<211>20
<212>DNA
<400>5663
catgggtgct gacgtttttc 20
<210>5664
<211>20
<212>DNA
<400>5664
ggattctgag gaatagaggg 20
<210>5665
<211>20
<212>DNA
<400>5665
gatgctgaca aagagggtt 20
<210>5666
<211>20
<212>DNA
<400>5666
ggaggcacta tgaagagcaa 20
<210>5667
<211>20
<212>DNA
<400>5667
gattccgttt cccctcaggc 20
<210>5668
<211>20
<212>DNA
<400>5668
gcaagcttgc aaagaacagc 20
<210>5669
<211>20
<212>DNA
<400>5669
agaggcgatt gctcggctgt 20
<210>5670
<211>20
<212>DNA
<400>5670
ggattctgca agggcataga 20
<210>5671
<211>20

<212>DNA
<400>5671
agggaaactc catttagggc 20
<210>5672
<211>20
<212>DNA
<400>5672
cgctatcgtc aaggttgcat 20
<210>5673
<211>20
<212>DNA
<400>5673
gctctgtact ctttctgctg 20
<210>5674
<211>20
<212>DNA
<400>5674
cttaccacaac aagagcgctg 20
<210>5675
<211>20
<212>DNA
<400>5675
ccgagataac cgagtgatta 20
<210>5676
<211>20
<212>DNA
<400>5676
aggggaaaga aaaagcgagc 20
<210>5677
<211>20
<212>DNA
<400>5677
gtccaggaga aggtgctttt 20
<210>5678
<211>20
<212>DNA
<400>5678
ccttttggaa ttgcagaggg 20
<210>5679
<211>20
<212>DNA
<400>5679
cttattggcg aggggatcct 20
<210>5680
<211>20
<212>DNA
<400>5680
gtcgtcacct tagacgattc 20
<210>5681
<211>20
<212>DNA
<400>5681
gcgacatatg caaaccagtt 20
<210>5682
<211>20
<212>DNA
<400>5682
ctccacacgt ccagaaaaag 20
<210>5683
<211>20
<212>DNA
<400>5683
ggtccaaggc tgagaatcgt 20
<210>5684

<211>20
<212>DNA
<400>5684
ctggcgctttt ggaacttgta 20
<210>5685
<211>20
<212>DNA
<400>5685
aagtcgaatc cgctcctgct 20
<210>5686
<211>20
<212>DNA
<400>5686
gcaaatatcg gagctgaagc 20
<210>5687
<211>20
<212>DNA
<400>5687
tgactcaccc agccttccta 20
<210>5688
<211>20
<212>DNA
<400>5688
ggctcaagca gaagtcttga 20
<210>5689
<211>20
<212>DNA
<400>5689
gcggtttctg ttgccattac 20
<210>5690
<211>20
<212>DNA
<400>5690
ggagggtgctg cttccaaagc 20
<210>5691
<211>20
<212>DNA
<400>5691
ctctattgaa gaggcgagca 20
<210>5692
<211>20
<212>DNA
<400>5692
aaatgggtca cggttgggggt 20
<210>5693
<211>20
<212>DNA
<400>5693
cctgctacca ccaattgcat 20
<210>5694
<211>20
<212>DNA
<400>5694
gctcagacat ttgccagtct 20
<210>5695
<211>20
<212>DNA
<400>5695
cgtccccaac cttcttagaa 20
<210>5696
<211>20
<212>DNA
<400>5696
ctacagcaac ccgaagaatc 20

<210>5697
<211>20
<212>DNA
<400>5697
ccatttgga cttaggtcct 20
<210>5698
<211>20
<212>DNA
<400>5698
cgtttaaattt ccgagccagc 20
<210>5699
<211>20
<212>DNA
<400>5699
caatcgcttc atcatgcagg 20
<210>5700
<211>20
<212>DNA
<400>5700
gcaacaacat cctgagtgag 20
<210>5701
<211>20
<212>DNA
<400>5701
ccagtgaact cgatttcacg 20
<210>5702
<211>20
<212>DNA
<400>5702
ctcggcactc aaagaaatcc 20
<210>5703
<211>20
<212>DNA
<400>5703
gattggtatg cgcattctacg 20
<210>5704
<211>20
<212>DNA
<400>5704
tccttccaca gagcttcac 20
<210>5705
<211>20
<212>DNA
<400>5705
cactagctgc taaagcctga 20
<210>5706
<211>20
<212>DNA
<400>5706
ccagtgaact cgatttcacg 20
<210>5707
<211>20
<212>DNA
<400>5707
gtacccccgg cccaagacac 20
<210>5708
<211>20
<212>DNA
<400>5708
gctgtagagc tgctgtaagc 20
<210>5709
<211>20
<212>DNA
<400>5709

tatgcggaga gacagtcgct 20
<210>5710
<211>20
<212>DNA
<400>5710
agggtttcca aatatcctcg 20
<210>5711
<211>20
<212>DNA
<400>5711
ctgcttggtt ctgatctggg 20
<210>5712
<211>20
<212>DNA
<400>5712
cagagcgtag gaggaggagg 20
<210>5713
<211>20
<212>DNA
<400>5713
aggctcggct ttcttcgata 20
<210>5714
<211>20
<212>DNA
<400>5714
gaagatcccc ccgtggcata 20
<210>5715
<211>20
<212>DNA
<400>5715
ttcccaaagt ccatcgcgca 20
<210>5716
<211>20
<212>DNA
<400>5716
gccatttgct gacgcattct 20
<210>5717
<211>20
<212>DNA
<400>5717
tgtgaggacg attctttgga 20
<210>5718
<211>20
<212>DNA
<400>5718
ggctcctcgt aagatgaaga 20
<210>5719
<211>20
<212>DNA
<400>5719
gagggtttca acattttgcc 20
<210>5720
<211>20
<212>DNA
<400>5720
gctttggagt gactttgcct 20
<210>5721
<211>20
<212>DNA
<400>5721
gtgccccgat ttggattact 20
<210>5722
<211>20
<212>DNA

<400>5722
 cgcaagctcg atgagaaaga 20
 <210>5723
 <211>20
 <212>DNA
 <400>5723
 cgttcttgta gcgatgcaga 20
 <210>5724
 <211>20
 <212>DNA
 <400>5724
 gagggcttca acattttgcc 20
 <210>5725
 <211>20
 <212>DNA
 <400>5725
 cgcaaggaaa tcgaagccaa 20
 <210>5726
 <211>20
 <212>DNA
 <400>5726
 gatgcgctca cttacgaatc 20
 <210>5727
 <211>20
 <212>DNA
 <400>5727
 gaccatctgt cagatggaag 20
 <210>5728
 <211>20
 <212>DNA
 <400>5728
 gccgtgtag catttttcgc 20
 <210>5729
 <211>20
 <212>DNA
 <400>5729
 cgagcatata tcgtcgagca 20
 <210>5730
 <211>20
 <212>DNA
 <400>5730
 ctgcctccga ctttgtaatc 20
 <210>5731
 <211>20
 <212>DNA
 <400>5731
 caggtcctgt aaagatcgct 20
 <210>5732
 <211>20
 <212>DNA
 <400>5732
 ggtcatgttg ctcacttcgt 20
 <210>5733
 <211>20
 <212>DNA
 <400>5733
 ctcaccccca agaaatccct 20
 <210>5734
 <211>20
 <212>DNA
 <400>5734
 ctctctgtca atcccaaaga 20
 <210>5735
 <211>20

<212>DNA
<400>5735
gtc gat gcct cag tac agat 20
<210>5736
<211>20
<212>DNA
<400>5736
gc ct at gt ttg cag ag ac aga 20
<210>5737
<211>20
<212>DNA
<400>5737
cg gt tcc gtc ag ca caa atc 20
<210>5738
<211>20
<212>DNA
<400>5738
gc at at at cg tc ga gc ag ac 20
<210>5739
<211>20
<212>DNA
<400>5739
ac acc at gcc ga ga gg tat g 20
<210>5740
<211>20
<212>DNA
<400>5740
gt ct c ct ttg gg tc att ttg 20
<210>5741
<211>20
<212>DNA
<400>5741
ga gg aa at gt ct gg g ct t ct 20
<210>5742
<211>20
<212>DNA
<400>5742
gt ct t gt t cc tt cc ga g ct t 20
<210>5743
<211>20
<212>DNA
<400>5743
ca c ca ac agt gg tat ga tag 20
<210>5744
<211>20
<212>DNA
<400>5744
ca a caa agt ag ag ag ct tc 20
<210>5745
<211>20
<212>DNA
<400>5745
gt ca aa at gt gt c cg ga ca g 20
<210>5746
<211>20
<212>DNA
<400>5746
cc t c c c t t t t g t c c ta agt 20
<210>5747
<211>20
<212>DNA
<400>5747
ga a ga act g gg gt t ga agc 20
<210>5748

<211>20
<212>DNA
<400>5748
cccctagaac taagttcaac 20
<210>5749
<211>20
<212>DNA
<400>5749
ccacccagaa attgctatgg 20
<210>5750
<211>20
<212>DNA
<400>5750
gcatctgatg gttttgctgc 20
<210>5751
<211>20
<212>DNA
<400>5751
gctagcaagc ctatgcctaa 20
<210>5752
<211>20
<212>DNA
<400>5752
gcatttatga agggggggttc 20
<210>5753
<211>20
<212>DNA
<400>5753
gggaactccc atagagaaca 20
<210>5754
<211>20
<212>DNA
<400>5754
cgacctctta ggtcgctaaa 20
<210>5755
<211>20
<212>DNA
<400>5755
gctacctcct gctgatattct 20
<210>5756
<211>20
<212>DNA
<400>5756
cacttgaaga gcgcatccat 20
<210>5757
<211>20
<212>DNA
<400>5757
aggggaaagc cgttgttggc 20
<210>5758
<211>20
<212>DNA
<400>5758
gcgaccttgc aaagagagaa 20
<210>5759
<211>20
<212>DNA
<400>5759
cgtcactcct ggggatttag 20
<210>5760
<211>20
<212>DNA
<400>5760
agcgtgttta cctccgattc 20

<210>5761
<211>20
<212>DNA
<400>5761
cgggtgagtgt tgtctccacc 20
<210>5762
<211>20
<212>DNA
<400>5762
ggattgcacc ctttacacga 20
<210>5763
<211>20
<212>DNA
<400>5763
aagcccctcc gctgctgaaa 20
<210>5764
<211>20
<212>DNA
<400>5764
gtactcttat ccccacctat 20
<210>5765
<211>20
<212>DNA
<400>5765
gggatgcttt ctggcaaaga 20
<210>5766
<211>20
<212>DNA
<400>5766
cacgacagta ttgtcctgct 20
<210>5767
<211>20
<212>DNA
<400>5767
tgccactcct ccaggggaag 20
<210>5768
<211>20
<212>DNA
<400>5768
caagaggctg gaaaaacctc 20
<210>5769
<211>20
<212>DNA
<400>5769
tcgagtacag taaccgtccg 20
<210>5770
<211>20
<212>DNA
<400>5770
gcttcttccc tagcttagag 20
<210>5771
<211>20
<212>DNA
<400>5771
gccttgcacg ctgttaaaca 20
<210>5772
<211>20
<212>DNA
<400>5772
tgctgttctg caagcgccca 20
<210>5773
<211>20
<212>DNA
<400>5773

ccaaactcag atgctgtacc 20
 <210>5774
 <211>20
 <212>DNA
 <400>5774
 gagaggaacc aaagaagcgt 20
 <210>5775
 <211>20
 <212>DNA
 <400>5775
 acatggagac cgcctacgat 20
 <210>5776
 <211>20
 <212>DNA
 <400>5776
 cgcccctaag gattttccta 20
 <210>5777
 <211>20
 <212>DNA
 <400>5777
 cctactttta caacccttag 20
 <210>5778
 <211>20
 <212>DNA
 <400>5778
 cttggcgatc tactcagaga 20
 <210>5779
 <211>20
 <212>DNA
 <400>5779
 atgtcgcccg tgcagaacga 20
 <210>5780
 <211>20
 <212>DNA
 <400>5780
 cgcagaagaa aacgtcaagt 20
 <210>5781
 <211>20
 <212>DNA
 <400>5781
 gaactgttgg cttcaactcc 20
 <210>5782
 <211>20
 <212>DNA
 <400>5782
 gcaggttatg tcggtgaaga 20
 <210>5783
 <211>20
 <212>DNA
 <400>5783
 cctcccctga aattcaatcc 20
 <210>5784
 <211>20
 <212>DNA
 <400>5784
 agacatccaa ctccaagcag 20
 <210>5785
 <211>20
 <212>DNA
 <400>5785
 gtagtctctc caatgagcag 20
 <210>5786
 <211>20
 <212>DNA

<400>5786
tggtgaaagg gccatggata 20
<210>5787
<211>20
<212>DNA
<400>5787
gccccctgct caaaaagttt 20
<210>5788
<211>20
<212>DNA
<400>5788
cggctgacct atagcaaagc 20
<210>5789
<211>20
<212>DNA
<400>5789
cggtgatctc gtgatccgtt 20
<210>5790
<211>20
<212>DNA
<400>5790
gctcgtcaac tacaagcaga 20
<210>5791
<211>20
<212>DNA
<400>5791
ggaggcatca aatacgcaga 20
<210>5792
<211>20
<212>DNA
<400>5792
cacttccagg attccgcaaa 20
<210>5793
<211>20
<212>DNA
<400>5793
cctcttccaa catcttacgc 20
<210>5794
<211>20
<212>DNA
<400>5794
ctcctctgga ataagagtgg 20
<210>5795
<211>20
<212>DNA
<400>5795
ctgcaccaca ggagcaattt 20
<210>5796
<211>20
<212>DNA
<400>5796
ggatacaacc tcatcatcag 20
<210>5797
<211>20
<212>DNA
<400>5797
gccctgagat tttgccatgt 20
<210>5798
<211>20
<212>DNA
<400>5798
aagcactgca tgcgtctgtg 20
<210>5799
<211>20

<212>DNA
<400>5799
gcagtcaagg caacattcgt 20
<210>5800
<211>20
<212>DNA
<400>5800
agcgacatca tcagcagacg 20
<210>5801
<211>20
<212>DNA
<400>5801
cttgggcggg acgaagtgcc 20
<210>5802
<211>20
<212>DNA
<400>5802
gagcgctgca agaaagttcg 20
<210>5803
<211>20
<212>DNA
<400>5803
cctcatcagt agcattaggg 20
<210>5804
<211>20
<212>DNA
<400>5804
cacagaaagg aagcatggca 20
<210>5805
<211>20
<212>DNA
<400>5805
cccatccaaa gccgtaatag 20
<210>5806
<211>20
<212>DNA
<400>5806
gcaagttccg taccctgatt 20
<210>5807
<211>20
<212>DNA
<400>5807
gaaaccctgc agctccagta 20
<210>5808
<211>20
<212>DNA
<400>5808
cttcctatg catccgtatc 20
<210>5809
<211>20
<212>DNA
<400>5809
aagggatatc ctggttgggc 20
<210>5810
<211>20
<212>DNA
<400>5810
gggaatctat cgcgttctct 20
<210>5811
<211>20
<212>DNA
<400>5811
cgtgctgcaa gtaaacttgc 20
<210>5812

<211>20
<212>DNA
<400>5812
gagtgcttttg ctcccctaaa 20
<210>5813
<211>20
<212>DNA
<400>5813
ccataacagc tctgtatgcg 20
<210>5814
<211>20
<212>DNA
<400>5814
cacctggaac gttatgagca 20
<210>5815
<211>20
<212>DNA
<400>5815
ccttgggata cagaacctac 20
<210>5816
<211>20
<212>DNA
<400>5816
cttccccatc attatgcagc 20
<210>5817
<211>20
<212>DNA
<400>5817
cccttttcgct cgtttacaga 20
<210>5818
<211>20
<212>DNA
<400>5818
ctcatccaca tgatccttgg 20
<210>5819
<211>20
<212>DNA
<400>5819
gaggctgtct gcaatcttgt 20
<210>5820
<211>20
<212>DNA
<400>5820
cgctccaaag acatacgaca 20
<210>5821
<211>20
<212>DNA
<400>5821
gaagctctca ctcacgaaca 20
<210>5822
<211>20
<212>DNA
<400>5822
gcaagacacg cttatgagag 20
<210>5823
<211>20
<212>DNA
<400>5823
ccctacctct agaaccaatg 20
<210>5824
<211>20
<212>DNA
<400>5824
cctctgcatc tctctgtcat 20

<210>5825
<211>20
<212>DNA
<400>5825
gggggggatct tcattcgtaa 20
<210>5826
<211>20
<212>DNA
<400>5826
ggcttttcatt tcacgtgttc 20
<210>5827
<211>20
<212>DNA
<400>5827
ccccgggtcc gcgttaaaat 20
<210>5828
<211>20
<212>DNA
<400>5828
ccttccatct ccaccagcaa 20
<210>5829
<211>20
<212>DNA
<400>5829
tgaacagagg ttcctcccac 20
<210>5830
<211>20
<212>DNA
<400>5830
aaacagccga acagttcgga 20
<210>5831
<211>20
<212>DNA
<400>5831
cccttcaaga gattcttggc 20
<210>5832
<211>20
<212>DNA
<400>5832
tcacacttcc ttcgagaagc 20
<210>5833
<211>20
<212>DNA
<400>5833
cgctgtagga tccattgaag 20
<210>5834
<211>20
<212>DNA
<400>5834
cgtcttcttc gcctacaagt 20
<210>5835
<211>20
<212>DNA
<400>5835
aatgccagca gcgaggagtt 20
<210>5836
<211>20
<212>DNA
<400>5836
cttcccgata gcttagctac 20
<210>5837
<211>20
<212>DNA
<400>5837

ccctcccttg gatcattcaa 20
<210>5838
<211>20
<212>DNA
<400>5838
ctgtggagtt cttccagaga 20
<210>5839
<211>20
<212>DNA
<400>5839
cagtgcgtaa aatacagcgg 20
<210>5840
<211>20
<212>DNA
<400>5840
ttgtttctct gcacgactcc 20
<210>5841
<211>20
<212>DNA
<400>5841
caggggtctt ttctgctctt 20
<210>5842
<211>20
<212>DNA
<400>5842
cccatcctag agcgaaatgc 20
<210>5843
<211>20
<212>DNA
<400>5843
ggcgggtgtgt tttagatcgt 20
<210>5844
<211>20
<212>DNA
<400>5844
gacggagaaa tccttcatgg 20
<210>5845
<211>20
<212>DNA
<400>5845
gctgcgtgca ctccgtgctt 20
<210>5846
<211>20
<212>DNA
<400>5846
ctgttccgat tctaccctac 20
<210>5847
<211>20
<212>DNA
<400>5847
ggggggctgt gattctaccc 20
<210>5848
<211>20
<212>DNA
<400>5848
tggttgccag gacaaaaagc 20
<210>5849
<211>20
<212>DNA
<400>5849
gatggggtag attctgtgag 20
<210>5850
<211>20
<212>DNA

<400>5850
ggatcaggat caacaagagc 20
<210>5851
<211>20
<212>DNA
<400>5851
cgggaaatcc catagctaag 20
<210>5852
<211>20
<212>DNA
<400>5852
gctggagaag aaacgtcatc 20
<210>5853
<211>20
<212>DNA
<400>5853
tcgtggtctt cccagtttag 20
<210>5854
<211>20
<212>DNA
<400>5854
cgcatgcaac aatagcatcg 20
<210>5855
<211>20
<212>DNA
<400>5855
cagggaaacaa ctactcaaac 20
<210>5856
<211>20
<212>DNA
<400>5856
ggatctacgg taagtccaga 20
<210>5857
<211>20
<212>DNA
<400>5857
ccttctatca aggcagggtt 20
<210>5858
<211>20
<212>DNA
<400>5858
gatccaggga acaactactc 20
<210>5859
<211>20
<212>DNA
<400>5859
ctcgtcttcc tgggatcata 20
<210>5860
<211>20
<212>DNA
<400>5860
gtggaactgt aaaccgcgta 20
<210>5861
<211>20
<212>DNA
<400>5861
tgcggaagct atcgggggtt 20
<210>5862
<211>20
<212>DNA
<400>5862
cctgcacaga aggctgtcat 20
<210>5863
<211>20

<212>DNA
<400>5863
cgagcgcgagtgc aacttcttca 20
<210>5864
<211>20
<212>DNA
<400>5864
gctccttcgg caagattagt 20
<210>5865
<211>20
<212>DNA
<400>5865
gatccttttat ttgctcaggc 20
<210>5866
<211>20
<212>DNA
<400>5866
gcggggccaag aaatttgcta 20
<210>5867
<211>20
<212>DNA
<400>5867
gagctgtagg gattcatctg 20
<210>5868
<211>20
<212>DNA
<400>5868
cgtcaatctc aacgtcctga 20
<210>5869
<211>20
<212>DNA
<400>5869
gctgagctag agagaaaagc 20
<210>5870
<211>20
<212>DNA
<400>5870
gtgattcctt ctttccatgc 20
<210>5871
<211>20
<212>DNA
<400>5871
ctcccccttt gttctgcgat 20
<210>5872
<211>20
<212>DNA
<400>5872
ctttgcggca ggcattgctt 20
<210>5873
<211>20
<212>DNA
<400>5873
ccttttcccc atctatcctc 20
<210>5874
<211>20
<212>DNA
<400>5874
ccctgtcctg gttttctatt 20
<210>5875
<211>20
<212>DNA
<400>5875
cccatgatgt gacgggcggt 20
<210>5876

<211>20
<212>DNA
<400>5876
ctcggctatg cttttggcaa 20
<210>5877
<211>20
<212>DNA
<400>5877
gagattcatt ccgcttccca 20
<210>5878
<211>20
<212>DNA
<400>5878
ggatccgtaa acgagatcca 20
<210>5879
<211>20
<212>DNA
<400>5879
cctgggggct acttacaaat 20
<210>5880
<211>20
<212>DNA
<400>5880
tcttggtgac tatgggggtcg 20
<210>5881
<211>20
<212>DNA
<400>5881
ctctggggga tatcgcataa 20
<210>5882
<211>20
<212>DNA
<400>5882
acggtcatgg aaactcctcc 20
<210>5883
<211>20
<212>DNA
<400>5883
ccttttagaaa cggaccgttc 20
<210>5884
<211>20
<212>DNA
<400>5884
cccattgatt ccgaagaagc 20
<210>5885
<211>20
<212>DNA
<400>5885
cttgcagggtg tgatccttct 20
<210>5886
<211>20
<212>DNA
<400>5886
ccgtgagcac acggttaattt 20
<210>5887
<211>20
<212>DNA
<400>5887
ctgctgcagc taaaactagc 20
<210>5888
<211>20
<212>DNA
<400>5888
gcgcggacct aatctctggg 20

<210>5889
<211>20
<212>DNA
<400>5889
cccaaatacct ctcttaaagt 20
<210>5890
<211>20
<212>DNA
<400>5890
gatttcgttt agagggtggg 20
<210>5891
<211>20
<212>DNA
<400>5891
gcgctctcgt atttcccttt 20
<210>5892
<211>20
<212>DNA
<400>5892
cccaaatacct ctcttaaagt 20
<210>5893
<211>20
<212>DNA
<400>5893
ttgtgattcc ggcttcatcc 20
<210>5894
<211>20
<212>DNA
<400>5894
cgatagcagc tctctcagaa 20
<210>5895
<211>20
<212>DNA
<400>5895
gccaatcgca tgaggaatct 20
<210>5896
<211>20
<212>DNA
<400>5896
ccttccatgg ggactttgat 20
<210>5897
<211>20
<212>DNA
<400>5897
gctcttctag cgttccaaag 20
<210>5898
<211>20
<212>DNA
<400>5898
gctgatgtgc acgtttacga 20
<210>5899
<211>20
<212>DNA
<400>5899
ctcctggtcc gcgcatacaa 20
<210>5900
<211>20
<212>DNA
<400>5900
ccgatacact ccatcctgat 20
<210>5901
<211>20
<212>DNA
<400>5901

agcgctatcc catgattgac 20
 <210>5902
 <211>20
 <212>DNA
 <400>5902
 gctctatctc caactcctga 20
 <210>5903
 <211>20
 <212>DNA
 <400>5903
 cgcactcact ttccagtgc 20
 <210>5904
 <211>20
 <212>DNA
 <400>5904
 gcagtacgca caatgtttgc 20
 <210>5905
 <211>20
 <212>DNA
 <400>5905
 acttctggag catggcaaac 20
 <210>5906
 <211>20
 <212>DNA
 <400>5906
 gggagaatga gcctgtagat 20
 <210>5907
 <211>20
 <212>DNA
 <400>5907
 ctctcctata atggcaagga 20
 <210>5908
 <211>20
 <212>DNA
 <400>5908
 ccgagctcct ctttgatcgt 20
 <210>5909
 <211>20
 <212>DNA
 <400>5909
 ccaagttcca tctgagcttg 20
 <210>5910
 <211>20
 <212>DNA
 <400>5910
 cacaatgatc cctcgatcct 20
 <210>5911
 <211>20
 <212>DNA
 <400>5911
 cctgtgtgct ttaatcctgc 20
 <210>5912
 <211>20
 <212>DNA
 <400>5912
 ccctggagac cttctatgta 20
 <210>5913
 <211>20
 <212>DNA
 <400>5913
 gctcctgagt atccgaatct 20
 <210>5914
 <211>20
 <212>DNA

<400>5914
ctgcccattg gagcggttatt 20
<210>5915
<211>20
<212>DNA
<400>5915
tgccgacact tcgccctctt 20
<210>5916
<211>20
<212>DNA
<400>5916
caagtagggc tgaccatcaa 20
<210>5917
<211>20
<212>DNA
<400>5917
gcgattctcg ttctctcttc 20
<210>5918
<211>20
<212>DNA
<400>5918
ttgaggagtt tctacgcgct 20
<210>5919
<211>20
<212>DNA
<400>5919
ttgcaagggc tcttgcaagt 20
<210>5920
<211>20
<212>DNA
<400>5920
caattgtgcg gacacttcgc 20
<210>5921
<211>20
<212>DNA
<400>5921
ctccatcact aaggagagag 20
<210>5922
<211>20
<212>DNA
<400>5922
caagcctagg aatcagtggtg 20
<210>5923
<211>20
<212>DNA
<400>5923
gcatcagaga gacccaatct 20
<210>5924
<211>20
<212>DNA
<400>5924
gtctctagaa ttatgcgcac 20
<210>5925
<211>20
<212>DNA
<400>5925
ccatgtccct gtttccgttt 20
<210>5926
<211>20
<212>DNA
<400>5926
cgtaggaacc tcggctttat 20
<210>5927
<211>20

<212>DNA
<400>5927
attgtctgtc gacactcacc 20
<210>5928
<211>20
<212>DNA
<400>5928
ccacggatga tacggtttga 20
<210>5929
<211>20
<212>DNA
<400>5929
agataggtca cctggcggat 20
<210>5930
<211>20
<212>DNA
<400>5930
ctgcgactac aggcttttct 20
<210>5931
<211>20
<212>DNA
<400>5931
ccaaatccta tgaccagggtc 20
<210>5932
<211>20
<212>DNA
<400>5932
ctgaaagcaa cacaggactg 20
<210>5933
<211>20
<212>DNA
<400>5933
gatactgagg agttcccttc 20
<210>5934
<211>20
<212>DNA
<400>5934
agagtggtag ctcccaaatac 20
<210>5935
<211>20
<212>DNA
<400>5935
ccggcactat agacatctgt 20
<210>5936
<211>20
<212>DNA
<400>5936
gagctataaa caacgacggc 20
<210>5937
<211>20
<212>DNA
<400>5937
cgctctgcaa gttctctaac 20
<210>5938
<211>20
<212>DNA
<400>5938
ggaactgatg tgattgctga 20
<210>5939
<211>20
<212>DNA
<400>5939
gtcgcattca ggagaagaag 20
<210>5940

```

<211>20
<212>DNA
<400>5940
ttacagagcg tcttgcttcc      20
<210>5941
<211>20
<212>DNA
<400>5941
gctttgggaa cgatatccca      20
<210>5942
<211>20
<212>DNA
<400>5942
ctctgaatct ccctcagatt      20
<210>5943
<211>20
<212>DNA
<400>5943
cctaattgtcg gaagttctcg      20
<210>5944
<211>20
<212>DNA
<400>5944
ctcccaagct ctgaaccaat      20
<210>5945
<211>20
<212>DNA
<400>5945
gggggttaggc atcgattatc      20
<210>5946
<211>20
<212>DNA
<400>5946
ctgagacgat ctctccatca      20
<210>5947
<211>20
<212>DNA
<400>5947
ggtgtggggc ttgacaaata      20
<210>5948
<211>20
<212>DNA
<400>5948
cgcatttttag ctttgggcag      20
<210>5949
<211>20
<212>DNA
<400>5949
gagaagagac ctcagctaac      20
<210>5950
<211>20
<212>DNA
<400>5950
ctgttaaggc ttccctcatc      20
<210>5951
<211>20
<212>DNA
<400>5951
cgataacacg acgcatacca      20
<210>5952
<211>20
<212>DNA
<400>5952
gcatggcccg atcaaatct      20

```

<210>5953
 <211>20
 <212>DNA
 <400>5953
 gacaaagcca tcacgatctc 20
 <210>5954
 <211>20
 <212>DNA
 <400>5954
 ccggtcagag tcgatacaaa 20
 <210>5955
 <211>20
 <212>DNA
 <400>5955
 acctccagca gctccaagac 20
 <210>5956
 <211>20
 <212>DNA
 <400>5956
 cctccacatg aagaggacta 20
 <210>5957
 <211>20
 <212>DNA
 <400>5957
 ggggttcctc tccttgaaaa 20
 <210>5958
 <211>20
 <212>DNA
 <400>5958
 gacacgacgt gcttgctttt 20
 <210>5959
 <211>20
 <212>DNA
 <400>5959
 cctctggatg tctgtgttct 20
 <210>5960
 <211>20
 <212>DNA
 <400>5960
 ggtgacttct ttgcgaacga 20
 <210>5961
 <211>20
 <212>DNA
 <400>5961
 cgttcgtgga gcatcattcc 20
 <210>5962
 <211>20
 <212>DNA
 <400>5962
 ctgtccaggc acagtattag 20
 <210>5963
 <211>20
 <212>DNA
 <400>5963
 tgattctccc gctcgtgctt 20
 <210>5964
 <211>20
 <212>DNA
 <400>5964
 gtcctactgc cgtttgatga 20
 <210>5965
 <211>20
 <212>DNA
 <400>5965

cggttgagtct gtagttacgg 20
 <210>5966
 <211>20
 <212>DNA
 <400>5966
 cgctcgtgct tgggatcacg 20
 <210>5967
 <211>20
 <212>DNA
 <400>5967
 ctatagatgc gggcatcatc 20
 <210>5968
 <211>20
 <212>DNA
 <400>5968
 tcaacttgca tacggtagcg 20
 <210>5969
 <211>20
 <212>DNA
 <400>5969
 cccacctaag gagacaaaac 20
 <210>5970
 <211>20
 <212>DNA
 <400>5970
 caccccaact ctatcttcag 20
 <210>5971
 <211>20
 <212>DNA
 <400>5971
 gagcttatcc tgtaaacactg 20
 <210>5972
 <211>20
 <212>DNA
 <400>5972
 gaagaaggcc ctaccataag 20
 <210>5973
 <211>20
 <212>DNA
 <400>5973
 gctgctcatc ccgcaaaaat 20
 <210>5974
 <211>20
 <212>DNA
 <400>5974
 gaactctgtg agtatcctcc 20
 <210>5975
 <211>20
 <212>DNA
 <400>5975
 cgaagtcata gtaggctcta 20
 <210>5976
 <211>20
 <212>DNA
 <400>5976
 cgaagatccc ctgctctatt 20
 <210>5977
 <211>20
 <212>DNA
 <400>5977
 gccgatcgtg tggttataca 20
 <210>5978
 <211>20
 <212>DNA

<400>5978
gtcttcgtgc agcacaacaa 20
<210>5979
<211>20
<212>DNA
<400>5979
ccggagttaa ctcttgctca 20
<210>5980
<211>20
<212>DNA
<400>5980
cgaaagggat cttctccatc 20
<210>5981
<211>20
<212>DNA
<400>5981
gcgtcttgaa aacctgcttt 20
<210>5982
<211>20
<212>DNA
<400>5982
ccggagttaa ctcttgctca 20
<210>5983
<211>20
<212>DNA
<400>5983
cgagttccta tcctccagga 20
<210>5984
<211>20
<212>DNA
<400>5984
cgacagcaaa acaagagtgg 20
<210>5985
<211>20
<212>DNA
<400>5985
atctcaggaa gaggtccag 20
<210>5986
<211>20
<212>DNA
<400>5986
tctcttagaa ttcggtcctg 20
<210>5987
<211>20
<212>DNA
<400>5987
cacggttgaa catcacttgg 20
<210>5988
<211>20
<212>DNA
<400>5988
agaagatggg tagtcacagc 20
<210>5989
<211>20
<212>DNA
<400>5989
ccaagagttc tctttgacgg 20
<210>5990
<211>20
<212>DNA
<400>5990
ggcacttttc taaagccgac 20
<210>5991
<211>20

```

<212>DNA
<400>5991
gatactccac ttccacacag      20
<210>5992
<211>20
<212>DNA
<400>5992
tacacgcagc catataccga      20
<210>5993
<211>20
<212>DNA
<400>5993
gggacttgta ggatgggtat      20
<210>5994
<211>20
<212>DNA
<400>5994
gcgactcttg ttgtatagtc      20
<210>5995
<211>20
<212>DNA
<400>5995
ccagactgtc atctctcgaa      20
<210>5996
<211>20
<212>DNA
<400>5996
gctcttcagc aagtcggtaa      20
<210>5997
<211>20
<212>DNA
<400>5997
ctcatcgga gatcttcaag      20
<210>5998
<211>20
<212>DNA
<400>5998
gggacttgta ggatgggtat      20
<210>5999
<211>20
<212>DNA
<400>5999
cctcctcaa tgagctctat      20
<210>6000
<211>20
<212>DNA
<400>6000
ggaagaaagc cgatgtcttc      20
<210>6001
<211>20
<212>DNA
<400>6001
ggccacatga agtcctgtat      20
<210>6002
<211>20
<212>DNA
<400>6002
ctcatcgga gatcttcaag      20
<210>6003
<211>20
<212>DNA
<400>6003
acttccttca tcaagctccc      20
<210>6004

```

<211>20
<212>DNA
<400>6004
ctaccgctct gctagtaaag 20
<210>6005
<211>20
<212>DNA
<400>6005
tgtgtcggct attgcactcc 20
<210>6006
<211>20
<212>DNA
<400>6006
gcacatcgct ttgcgattag 20
<210>6007
<211>20
<212>DNA
<400>6007
gctgttgtag agtacctcct 20
<210>6008
<211>20
<212>DNA
<400>6008
ccattgtccg cacgttgaaa 20
<210>6009
<211>20
<212>DNA
<400>6009
ccctgctcca ggaaaaattc 20
<210>6010
<211>20
<212>DNA
<400>6010
ctggaggcct tctctcttat 20
<210>6011
<211>20
<212>DNA
<400>6011
acttaccccc ttgggagttt 20
<210>6012
<211>20
<212>DNA
<400>6012
tctcaagggg accggctcgt 20
<210>6013
<211>20
<212>DNA
<400>6013
ctctcgccat ctcttatctg 20
<210>6014
<211>20
<212>DNA
<400>6014
cttgagctgc cactgtacaa 20
<210>6015
<211>20
<212>DNA
<400>6015
ggtcgctcag agaaaaagac 20
<210>6016
<211>20
<212>DNA
<400>6016
gagagtaggt ttccacagca 20

<210>6017
<211>20
<212>DNA
<400>6017
ggaaacttca gcacatgcct 20
<210>6018
<211>20
<212>DNA
<400>6018
ggagagaaaa tgagaagtgc 20
<210>6019
<211>20
<212>DNA
<400>6019
ctagtatccg cctctcggct 20
<210>6020
<211>20
<212>DNA
<400>6020
gtagagatag tgcgatacgc 20
<210>6021
<211>20
<212>DNA
<400>6021
gtgggcaatt ttccgagcaa 20
<210>6022
<211>20
<212>DNA
<400>6022
ggaaacttca gcacatgcct 20
<210>6023
<211>20
<212>DNA
<400>6023
cttcctgcga cttttgttcc 20
<210>6024
<211>20
<212>DNA
<400>6024
ctgctcacag gattgttctt 20
<210>6025
<211>20
<212>DNA
<400>6025
cgatccgcaa acttctgttc 20
<210>6026
<211>20
<212>DNA
<400>6026
caattgctcg catgatccat 20
<210>6027
<211>20
<212>DNA
<400>6027
cgtttctctg cttttgcagc 20
<210>6028
<211>20
<212>DNA
<400>6028
ggcacagtgc ctttagttcg 20
<210>6029
<211>20
<212>DNA
<400>6029

ggacgatctt ctacgagttc 20
<210>6030
<211>20
<212>DNA
<400>6030
aaggagaaga aaaggactct 20
<210>6031
<211>20
<212>DNA
<400>6031
gaaacgggaa gaaacacctg 20
<210>6032
<211>20
<212>DNA
<400>6032
ccacggcttt accgcttaaa 20
<210>6033
<211>20
<212>DNA
<400>6033
gagcgtagag ggctgtggct 20
<210>6034
<211>20
<212>DNA
<400>6034
cataggcgcc ttcgtaaagt 20
<210>6035
<211>20
<212>DNA
<400>6035
taggctatgg atttgggagg 20
<210>6036
<211>20
<212>DNA
<400>6036
ggcgagctct tttgattgct 20
<210>6037
<211>20
<212>DNA
<400>6037
agagtatgga ggcaggatca 20
<210>6038
<211>20
<212>DNA
<400>6038
gcaatccttt cggaatctgc 20
<210>6039
<211>20
<212>DNA
<400>6039
ggcgggactc tagtaaaatg 20
<210>6040
<211>20
<212>DNA
<400>6040
gagattcgag ggggaaagca 20
<210>6041
<211>20
<212>DNA
<400>6041
caaggggtgtg gatcgtgata 20
<210>6042
<211>20
<212>DNA

<400>6042
gactccacat cctctctaac 20
<210>6043
<211>20
<212>DNA
<400>6043
agctccgaga aacaaccatc 20
<210>6044
<211>20
<212>DNA
<400>6044
ctgggttttct tctcgtagag 20
<210>6045
<211>20
<212>DNA
<400>6045
tctcctgaag agcttcttgc 20
<210>6046
<211>20
<212>DNA
<400>6046
gcgggcgccta ttttcaaaga 20
<210>6047
<211>20
<212>DNA
<400>6047
ctgcaaacgg gatgctctta 20
<210>6048
<211>20
<212>DNA
<400>6048
gacatgatga actcggcggt 20
<210>6049
<211>20
<212>DNA
<400>6049
ctccgctctc taaagcaaag 20
<210>6050
<211>20
<212>DNA
<400>6050
ctcttcctcaa gccgaatctg 20
<210>6051
<211>20
<212>DNA
<400>6051
ccgggaagaa aagcttcttc 20
<210>6052
<211>20
<212>DNA
<400>6052
gtcatcgaga ttgagaggga 20
<210>6053
<211>20
<212>DNA
<400>6053
cgaacctacc tcatcatgag 20
<210>6054
<211>20
<212>DNA
<400>6054
gaaccaaggc tttttgagga 20
<210>6055
<211>20

<212>DNA
<400>6055
caaaagcaat gcctgctgac 20
<210>6056
<211>20
<212>DNA
<400>6056
ggtcccctcc cattaaatct 20
<210>6057
<211>20
<212>DNA
<400>6057
ggcagagcca tcttctaaag 20
<210>6058
<211>20
<212>DNA
<400>6058
gcacgcctta ccatgacatt 20
<210>6059
<211>20
<212>DNA
<400>6059
ccaccagcat aatcttcagc 20
<210>6060
<211>20
<212>DNA
<400>6060
gagctgtgta aggaatgtgc 20
<210>6061
<211>20
<212>DNA
<400>6061
ggcacttcct cttctacagt 20
<210>6062
<211>20
<212>DNA
<400>6062
gcagatccag aaaccaaagc 20
<210>6063
<211>20
<212>DNA
<400>6063
gcagaaggat gtcagcatag 20
<210>6064
<211>20
<212>DNA
<400>6064
cagaagaaac tgctaccgct 20
<210>6065
<211>20
<212>DNA
<400>6065
ctcccctgat ccctacaaaa 20
<210>6066
<211>20
<212>DNA
<400>6066
gactcggtca caagttgctc 20
<210>6067
<211>20
<212>DNA
<400>6067
cgctgctcaa gaacatcaga 20
<210>6068

<211>20
<212>DNA
<400>6068
ttaagagctc tctaccgggt 20
<210>6069
<211>20
<212>DNA
<400>6069
catccacatg tggatgagca 20
<210>6070
<211>20
<212>DNA
<400>6070
cgggtatggc caataactga 20
<210>6071
<211>20
<212>DNA
<400>6071
ccgccataga aagcatgttc 20
<210>6072
<211>20
<212>DNA
<400>6072
cgaagcatct tcactacagg 20
<210>6073
<211>20
<212>DNA
<400>6073
gagacagcac ctaaaaccac 20
<210>6074
<211>20
<212>DNA
<400>6074
gacgagcttt aacctccatc 20
<210>6075
<211>20
<212>DNA
<400>6075
catcatagga ttgcgaggtc 20
<210>6076
<211>20
<212>DNA
<400>6076
aagaaggcaa aggcctgagg 20
<210>6077
<211>20
<212>DNA
<400>6077
caaaacctag agggccaagg 20
<210>6078
<211>20
<212>DNA
<400>6078
cctgcactcg agaatcttgt 20
<210>6079
<211>20
<212>DNA
<400>6079
gaaacaccac acccaccaaa 20
<210>6080
<211>20
<212>DNA
<400>6080
ggccatagaa aaaagccagg 20

<210>6081
<211>20
<212>DNA
<400>6081
gactgaaaat cccacaaaag 20
<210>6082
<211>20
<212>DNA
<400>6082
ccgagagcaa ctcctacaaa 20
<210>6083
<211>20
<212>DNA
<400>6083
atgaagcaga ttttggtact 20
<210>6084
<211>20
<212>DNA
<400>6084
caccacaccc accaaaaaga 20
<210>6085
<211>20
<212>DNA
<400>6085
gcgacctctt cgatatccat 20
<210>6086
<211>20
<212>DNA
<400>6086
agcaggtgcg ggtatttcat 20
<210>6087
<211>20
<212>DNA
<400>6087
cctgtgtgat gatgggagta 20
<210>6088
<211>20
<212>DNA
<400>6088
agagcttagc tacggcttgc 20
<210>6089
<211>20
<212>DNA
<400>6089
ccccaagcac aagatcttca 20
<210>6090
<211>20
<212>DNA
<400>6090
ggtcgcgcga caccctgtag 20
<210>6091
<211>20
<212>DNA
<400>6091
ccctccaata cctgcttcta 20
<210>6092
<211>20
<212>DNA
<400>6092
ccacccttgg ctagttctta 20
<210>6093
<211>20
<212>DNA
<400>6093

ggatagcttc tggaaattcc 20
<210>6094
<211>20
<212>DNA
<400>6094
cctgcttcta gaacagttcg 20
<210>6095
<211>20
<212>DNA
<400>6095
ctgtcgttga aataggcacg 20
<210>6096
<211>20
<212>DNA
<400>6096
cgaagtctt actgaagggg 20
<210>6097
<211>20
<212>DNA
<400>6097
ggagctcctg gttatcagtt 20
<210>6098
<211>20
<212>DNA
<400>6098
cttaccgcag gtgaaaacta 20
<210>6099
<211>20
<212>DNA
<400>6099
gtggtcggag tttccaaaag 20
<210>6100
<211>20
<212>DNA
<400>6100
cacaggttct gctacctagt 20
<210>6101
<211>20
<212>DNA
<400>6101
gctgctcacc aagttatcca 20
<210>6102
<211>20
<212>DNA
<400>6102
catctgtgac taaagcgcca 20
<210>6103
<211>20
<212>DNA
<400>6103
ctgctctggg aaacctatga 20
<210>6104
<211>20
<212>DNA
<400>6104
tcccctatta ggggaagcag 20
<210>6105
<211>20
<212>DNA
<400>6105
ttagagcctc agagagccgt 20
<210>6106
<211>20
<212>DNA

<400>6106
 ctcagggtta cgaagcttct 20
 <210>6107
 <211>20
 <212>DNA
 <400>6107
 gcagcgcaag aagttcttgt 20
 <210>6108
 <211>20
 <212>DNA
 <400>6108
 ccgttagaag tttgtgggca 20
 <210>6109
 <211>20
 <212>DNA
 <400>6109
 gacatcgccc ctgttataga 20
 <210>6110
 <211>20
 <212>DNA
 <400>6110
 cctacaggta gtgttcacac 20
 <210>6111
 <211>20
 <212>DNA
 <400>6111
 gacaagagga ctgcaaaaac 20
 <210>6112
 <211>20
 <212>DNA
 <400>6112
 ccaacttcgg gtaggtctat 20
 <210>6113
 <211>20
 <212>DNA
 <400>6113
 caaggaactc gtgaggagtt 20
 <210>6114
 <211>20
 <212>DNA
 <400>6114
 cactagaaaa tcaggactcc 20
 <210>6115
 <211>20
 <212>DNA
 <400>6115
 ctaaagagtg tccacatgcc 20
 <210>6116
 <211>20
 <212>DNA
 <400>6116
 cgttcgtctt cagacagttc 20
 <210>6117
 <211>20
 <212>DNA
 <400>6117
 cgttaccgtt tccgcaggtc 20
 <210>6118
 <211>20
 <212>DNA
 <400>6118
 ggaacataga gaactccatc 20
 <210>6119
 <211>20

```

<212>DNA
<400>6119
gggtctttcc tttgcagctt      20
<210>6120
<211>20
<212>DNA
<400>6120
caggtcgcac caatgactgt      20
<210>6121
<211>20
<212>DNA
<400>6121
gctaaggacc tcttttagcag      20
<210>6122
<211>20
<212>DNA
<400>6122
gcaatcggag gggcacaaat      20
<210>6123
<211>20
<212>DNA
<400>6123
cgtacgcgct tgctttaact      20
<210>6124
<211>20
<212>DNA
<400>6124
ggcggggcca tttttatgaa      20
<210>6125
<211>20
<212>DNA
<400>6125
cttccctgga cgagttcttt      20
<210>6126
<211>20
<212>DNA
<400>6126
ctcgtagctt taaaccagac      20
<210>6127
<211>20
<212>DNA
<400>6127
ccttaagatc tgcaagtgcc      20
<210>6128
<211>20
<212>DNA
<400>6128
ggctatctta gggattagg      20
<210>6129
<211>20
<212>DNA
<400>6129
tgcagtcaag tccgaaaacg      20
<210>6130
<211>20
<212>DNA
<400>6130
agaagctacc gaacctgttg      20
<210>6131
<211>20
<212>DNA
<400>6131
cacagctgat ttcgagtaga      20
<210>6132

```



```

<211>20
<212>DNA
<400>6132
gaagcaagaa gcacaaggct      20
<210>6133
<211>20
<212>DNA
<400>6133
gccatgactg cgttatgaac      20
<210>6134
<211>20
<212>DNA
<400>6134
ctcgatggaa ccaaaaaagt      20
<210>6135
<211>20
<212>DNA
<400>6135
gaaaagaacg caaatcccgc      20
<210>6136
<211>20
<212>DNA
<400>6136
gacacaagtg ccacaaagga      20
<210>6137
<211>20
<212>DNA
<400>6137
ccaggtaagc catgcctatt      20
<210>6138
<211>20
<212>DNA
<400>6138
gctgacgtat gctggcatga      20
<210>6139
<211>20
<212>DNA
<400>6139
ctatcactac tactccaggt      20
<210>6140
<211>20
<212>DNA
<400>6140
gcttcctcca gaaagagcaa      20
<210>6141
<211>20
<212>DNA
<400>6141
cgcgcttcca ccaatttatg      20
<210>6142
<211>20
<212>DNA
<400>6142
caccaaaaac cacgccaaac      20
<210>6143
<211>20
<212>DNA
<400>6143
ctgctaataa ggcagcctca      20
<210>6144
<211>20
<212>DNA
<400>6144
ggaaggcgat atcattgatg      20

```

<210>6145
<211>20
<212>DNA
<400>6145
gcgctgtaga tcttgatgac 20
<210>6146
<211>20
<212>DNA
<400>6146
gcgctgtaga tcttgatgac 20
<210>6147
<211>20
<212>DNA
<400>6147
acctaccccc taatcacagc 20
<210>6148
<211>20
<212>DNA
<400>6148
caggatcggc agatgtacaa 20
<210>6149
<211>20
<212>DNA
<400>6149
catgctctct accctaaagg 20
<210>6150
<211>20
<212>DNA
<400>6150
ctagttctct tgagagagcg 20
<210>6151
<211>20
<212>DNA
<400>6151
gaagcaccgt aaaccaactg 20
<210>6152
<211>20
<212>DNA
<400>6152
ctcccaatct ttcttcggtc 20
<210>6153
<211>20
<212>DNA
<400>6153
cgacaacaaa cagttctgac 20
<210>6154
<211>20
<212>DNA
<400>6154
caaagagcac aggcaaacca 20
<210>6155
<211>20
<212>DNA
<400>6155
gcacgtacat cggtttcaac 20
<210>6156
<211>20
<212>DNA
<400>6156
tgaacgataa ctctcttagc 20
<210>6157
<211>20
<212>DNA
<400>6157

caactgttct tttgggccg 20
<210>6158
<211>20
<212>DNA
<400>6158
ctggagcaaa agaagacgag 20
<210>6159
<211>20
<212>DNA
<400>6159
aatacttctc ctgaaccgca 20
<210>6160
<211>20
<212>DNA
<400>6160
cttctcctct ccagctaaag 20
<210>6161
<211>20
<212>DNA
<400>6161
gcatggcat gatcggagag 20
<210>6162
<211>20
<212>DNA
<400>6162
ccaatttgta ggacatggcg 20
<210>6163
<211>20
<212>DNA
<400>6163
ccgaagtatc ctctagagga 20
<210>6164
<211>20
<212>DNA
<400>6164
gctacatgga agagggaatc 20
<210>6165
<211>20
<212>DNA
<400>6165
gctgttcccc acgttctatt 20
<210>6166
<211>20
<212>DNA
<400>6166
gctgtacact catagcgaga 20
<210>6167
<211>20
<212>DNA
<400>6167
cctgactatc tatcagggca 20
<210>6168
<211>20
<212>DNA
<400>6168
ccttgtagac aaactcctcg 20
<210>6169
<211>20
<212>DNA
<400>6169
cggcagcagc aacaatcata 20
<210>6170
<211>20
<212>DNA

<400>6170
 ccgtactcgc ctttaattcct 20
 <210>6171
 <211>20
 <212>DNA
 <400>6171
 gatccacaga ctgcaggaaa 20
 <210>6172
 <211>20
 <212>DNA
 <400>6172
 tttccctgct atttcctttgg 20
 <210>6173
 <211>20
 <212>DNA
 <400>6173
 ccttttcttct tcggaattgc 20
 <210>6174
 <211>20
 <212>DNA
 <400>6174
 gattcgcctg agcagcacat 20
 <210>6175
 <211>20
 <212>DNA
 <400>6175
 cctcgctgcc gttttgattt 20
 <210>6176
 <211>20
 <212>DNA
 <400>6176
 ccccttgctg acctgaaacg 20
 <210>6177
 <211>20
 <212>DNA
 <400>6177
 cacatcagtc ctcccatagc 20
 <210>6178
 <211>20
 <212>DNA
 <400>6178
 attggtgtcg gagtctcccc 20
 <210>6179
 <211>20
 <212>DNA
 <400>6179
 ccttccatgg taaaggagca 20
 <210>6180
 <211>20
 <212>DNA
 <400>6180
 gtttcagcat ggtcacctct 20
 <210>6181
 <211>20
 <212>DNA
 <400>6181
 cactccctcg tccaaagcga 20
 <210>6182
 <211>20
 <212>DNA
 <400>6182
 cttccatggt aaaggagcat 20
 <210>6183
 <211>20

```

<212>DNA
<400>6183
ccagagcaaa atcctctagg      20
<210>6184
<211>20
<212>DNA
<400>6184
cccttggtc gtaaagcatt      20
<210>6185
<211>20
<212>DNA
<400>6185
cgctggctag ggatcgcgac     20
<210>6186
<211>20
<212>DNA
<400>6186
ctccgtagac gtttccttct     20
<210>6187
<211>20
<212>DNA
<400>6187
ggaaatgcca ctgaagaagc     20
<210>6188
<211>20
<212>DNA
<400>6188
gcgactgcga aaaccttctt     20
<210>6189
<211>20
<212>DNA
<400>6189
caaggtcagc atcgagaaag     20
<210>6190
<211>20
<212>DNA
<400>6190
ccctgcagga gagcaatatg     20
<210>6191
<211>20
<212>DNA
<400>6191
gcctctctac atatgtccga     20
<210>6192
<211>20
<212>DNA
<400>6192
ggctgcttta agatgcgcta     20
<210>6193
<211>20
<212>DNA
<400>6193
catcaagcgc gctctaattgt     20
<210>6194
<211>20
<212>DNA
<400>6194
gcctctctac atatgtccga     20
<210>6195
<211>20
<212>DNA
<400>6195
gggcagagca tctttgtcaa     20
<210>6196

```

<211>20
<212>DNA
<400>6196
gtagacacac tcacagtcct 20
<210>6197
<211>20
<212>DNA
<400>6197
cacgtagccg cggattctct 20
<210>6198
<211>20
<212>DNA
<400>6198
gacccaacaa gaactgctct 20
<210>6199
<211>20
<212>DNA
<400>6199
gctggttaggt ctaggggatt 20
<210>6200
<211>20
<212>DNA
<400>6200
cttgaaccta catgcccga 20
<210>6201
<211>20
<212>DNA
<400>6201
gcgccattgt caggatctat 20
<210>6202
<211>20
<212>DNA
<400>6202
ggcgccgtat tcacaattac 20
<210>6203
<211>20
<212>DNA
<400>6203
ccctgatgaa ggcattggaa 20
<210>6204
<211>20
<212>DNA
<400>6204
ctatccatgc gcccgcagta 20
<210>6205
<211>20
<212>DNA
<400>6205
catacgcacc cccttcaaaa 20
<210>6206
<211>20
<212>DNA
<400>6206
ctcggtagca aagctaaagg 20
<210>6207
<211>20
<212>DNA
<400>6207
aggaagagct cctaaagcac 20
<210>6208
<211>20
<212>DNA
<400>6208
catacgcacc cccttcaaaa 20

<210>6209
<211>20
<212>DNA
<400>6209
gctcaggcag ttctacgaaa 20
<210>6210
<211>20
<212>DNA
<400>6210
gcgcaaatca cactaaaggc 20
<210>6211
<211>20
<212>DNA
<400>6211
cactgacagc gatcttccta 20
<210>6212
<211>20
<212>DNA
<400>6212
gcaacagaga ctgcagaaaa 20
<210>6213
<211>20
<212>DNA
<400>6213
ccccctgttc ttttatccct 20
<210>6214
<211>20
<212>DNA
<400>6214
acatgctcgc tcaggcagtt 20
<210>6215
<211>20
<212>DNA
<400>6215
ggcaagctac agtcttagga 20
<210>6216
<211>20
<212>DNA
<400>6216
ctctcgctat ttccaggact 20
<210>6217
<211>20
<212>DNA
<400>6217
agcccaaccg agtttaggat 20
<210>6218
<211>20
<212>DNA
<400>6218
tgcgtatagc cgtttttagga 20
<210>6219
<211>20
<212>DNA
<400>6219
ggatgggcag cagaatatgt 20
<210>6220
<211>20
<212>DNA
<400>6220
ccttctatat agacgcaggg 20
<210>6221
<211>20
<212>DNA
<400>6221

ccatacaggg ggcattggtg 20
<210>6222
<211>20
<212>DNA
<400>6222
cactgacagc gatcttccta 20
<210>6223
<211>20
<212>DNA
<400>6223
ctgctacgat tctgctcttc 20
<210>6224
<211>20
<212>DNA
<400>6224
ggatgggcag cagaatatgt 20
<210>6225
<211>20
<212>DNA
<400>6225
gcactccctg acgtttactt 20
<210>6226
<211>20
<212>DNA
<400>6226
cgccactctc aagatcttct 20
<210>6227
<211>20
<212>DNA
<400>6227
ttgggaggct gtagttcctt 20
<210>6228
<211>20
<212>DNA
<400>6228
ggacaataca gcctctatgc 20
<210>6229
<211>20
<212>DNA
<400>6229
gaagtgacct tcccttgag 20
<210>6230
<211>20
<212>DNA
<400>6230
gcatcggtga tctatgcaa 20
<210>6231
<211>20
<212>DNA
<400>6231
ccctagcaaa acttgaaccc 20
<210>6232
<211>20
<212>DNA
<400>6232
ctccctccgg aagtgacctt 20
<210>6233
<211>20
<212>DNA
<400>6233
cggggggaaa aatggaatca 20
<210>6234
<211>20
<212>DNA


```

<400>6234
ccgtaagtgt cggatatgatg      20
<210>6235
<211>20
<212>DNA
<400>6235
ctccttagaa caagcgtctc      20
<210>6236
<211>20
<212>DNA
<400>6236
gcacactagg aggcataact      20
<210>6237
<211>20
<212>DNA
<400>6237
ctgcagctgc tctactttca      20
<210>6238
<211>20
<212>DNA
<400>6238
gagcgattca aactagggga      20
<210>6239
<211>20
<212>DNA
<400>6239
ccctatcggg acaaacgtta      20
<210>6240
<211>20
<212>DNA
<400>6240
cgcattcttg caatcaccga      20
<210>6241
<211>20
<212>DNA
<400>6241
cctgcagaag ctacaggata      20
<210>6242
<211>20
<212>DNA
<400>6242
cgctctgctt atagcgatgt      20
<210>6243
<211>20
<212>DNA
<400>6243
gccattgccc aagcaaaaac      20
<210>6244
<211>20
<212>DNA
<400>6244
aaggccatct gcaagagatg      20
<210>6245
<211>20
<212>DNA
<400>6245
ggtggtaa at gggatatccag      20
<210>6246
<211>20
<212>DNA
<400>6246
ggccatacct tcacaggaaa      20
<210>6247
<211>20

```

<212>DNA
<400>6247
gctgctattg caggaagttc 20
<210>6248
<211>20
<212>DNA
<400>6248
ggaaacctat acaagcaggg 20
<210>6249
<211>20
<212>DNA
<400>6249
ggcgcaatgc taaggacgat 20
<210>6250
<211>20
<212>DNA
<400>6250
gggacttcag ctaatgaaag 20
<210>6251
<211>20
<212>DNA
<400>6251
tacccttag gcaaaacaca 20
<210>6252
<211>20
<212>DNA
<400>6252
cggcacgggt tgttttcccc 20
<210>6253
<211>20
<212>DNA
<400>6253
gccgttctta tcagttctcc 20
<210>6254
<211>20
<212>DNA
<400>6254
cgcaagtttt tagggatgcc 20
<210>6255
<211>20
<212>DNA
<400>6255
cttctttaca cttcccaggg 20
<210>6256
<211>20
<212>DNA
<400>6256
ggaacttgga cacgctttca 20
<210>6257
<211>20
<212>DNA
<400>6257
catctccata cgattgccca 20
<210>6258
<211>20
<212>DNA
<400>6258
aacagccaat cactccaacg 20
<210>6259
<211>20
<212>DNA
<400>6259
cgaaaatctc ctccgtaggt 20
<210>6260

<211>20
<212>DNA
<400>6260
cgcatcctt tcctttctcc 20
<210>6261
<211>20
<212>DNA
<400>6261
cccacatcct aggacagtat 20
<210>6262
<211>20
<212>DNA
<400>6262
caggaaaagg aatcgctagg 20
<210>6263
<211>20
<212>DNA
<400>6263
cagcaggaga tacattctcc 20
<210>6264
<211>20
<212>DNA
<400>6264
cccgaagtcc caacaaaaag 20
<210>6265
<211>20
<212>DNA
<400>6265
catactacca tgcacggaca 20
<210>6266
<211>20
<212>DNA
<400>6266
gttgaatcga tttcggagtc 20
<210>6267
<211>20
<212>DNA
<400>6267
ctttgtcaag gttgtgcgag 20
<210>6268
<211>20
<212>DNA
<400>6268
ctgtttgggc cattgaaaac 20
<210>6269
<211>20
<212>DNA
<400>6269
aggcagctga gctaaagtct 20
<210>6270
<211>20
<212>DNA
<400>6270
tcactcgtaa cggagtccta 20
<210>6271
<211>20
<212>DNA
<400>6271
ctctccccctg ctttctgaaa 20
<210>6272
<211>20
<212>DNA
<400>6272
ctcaaaccct gtattgtggg 20

<210>6273
<211>20
<212>DNA
<400>6273
gctcctcagg agaaagaatc 20
<210>6274
<211>20
<212>DNA
<400>6274
ccatcgcgat caaacacata 20
<210>6275
<211>20
<212>DNA
<400>6275
ctccaacatc tctgcgcagc 20
<210>6276
<211>20
<212>DNA
<400>6276
gtcagaaaga gagctcctga 20
<210>6277
<211>20
<212>DNA
<400>6277
agctcccaa ggataccaat 20
<210>6278
<211>20
<212>DNA
<400>6278
gaaggctcct ggaatctctt 20
<210>6279
<211>20
<212>DNA
<400>6279
ttgggctcta atcccccttta 20
<210>6280
<211>20
<212>DNA
<400>6280
ataccacccc tcttgatcca 20
<210>6281
<211>20
<212>DNA
<400>6281
caccctcta aaaacgacgc 20
<210>6282
<211>20
<212>DNA
<400>6282
gaggctcagg catagcaaaa 20
<210>6283
<211>20
<212>DNA
<400>6283
cttcttgatc ccctaaaggg 20
<210>6284
<211>20
<212>DNA
<400>6284
caatacctcg caaggtctga 20
<210>6285
<211>20
<212>DNA
<400>6285

ccgcttgcac cttatggaag 20
<210>6286
<211>20
<212>DNA
<400>6286
acctgagctc ctgcagctat 20
<210>6287
<211>20
<212>DNA
<400>6287
cacagtcgga gactttcaca 20
<210>6288
<211>20
<212>DNA
<400>6288
gaggattagc gtccgagttt 20
<210>6289
<211>20
<212>DNA
<400>6289
gctacatatg aggccatggt 20
<210>6290
<211>20
<212>DNA
<400>6290
cacagtcgga gactttcaca 20
<210>6291
<211>20
<212>DNA
<400>6291
ctcgactcta ttgagatcgc 20
<210>6292
<211>20
<212>DNA
<400>6292
ccatcacaaa gacccctcat 20
<210>6293
<211>20
<212>DNA
<400>6293
gcatccctaa ctgaacgcat 20
<210>6294
<211>20
<212>DNA
<400>6294
ccccttcgaa aatgcaatgc 20
<210>6295
<211>20
<212>DNA
<400>6295
agagaaaagc tcccgtagtg 20
<210>6296
<211>20
<212>DNA
<400>6296
tgcccgtac tctgcgctaa 20
<210>6297
<211>20
<212>DNA
<400>6297
cctgagctac agactttacc 20
<210>6298
<211>20
<212>DNA

<400>6298
agagaaaagc tcccgtagtg 20
<210>6299
<211>20
<212>DNA
<400>6299
ctccatcctc agtctctcta 20
<210>6300
<211>20
<212>DNA
<400>6300
cagcgagttg cagcatttga 20
<210>6301
<211>20
<212>DNA
<400>6301
cagctgccta aggaattgga 20
<210>6302
<211>20
<212>DNA
<400>6302
ccttggaag aggataagga 20
<210>6303
<211>20
<212>DNA
<400>6303
ggagcaattc gaccatggtt 20
<210>6304
<211>20
<212>DNA
<400>6304
cgtcaaggag gagtttcaag 20
<210>6305
<211>20
<212>DNA
<400>6305
ggagctgata cttgctgcgt 20
<210>6306
<211>20
<212>DNA
<400>6306
agtctctgta gtagagacgg 20
<210>6307
<211>20
<212>DNA
<400>6307
ctgtcgagag cagcttaaag 20
<210>6308
<211>20
<212>DNA
<400>6308
gggtgtatca tcatcggaga 20
<210>6309
<211>20
<212>DNA
<400>6309
gccaagggt aatatagctc 20
<210>6310
<211>20
<212>DNA
<400>6310
gcgcttgga tcgctggagc 20
<210>6311
<211>20

<212>DNA
 <400>6311
 gaatccgcaa ggaatttcca 20
 <210>6312
 <211>20
 <212>DNA
 <400>6312
 cgaggacgtc tcgaggtagc 20
 <210>6313
 <211>20
 <212>DNA
 <400>6313
 ctacgagtga tcccgactat 20
 <210>6314
 <211>20
 <212>DNA
 <400>6314
 aaggggactg ctggctaaat 20
 <210>6315
 <211>20
 <212>DNA
 <400>6315
 ttatgggagt cccagcgcac 20
 <210>6316
 <211>20
 <212>DNA
 <400>6316
 ggagcaacta ctctcgatcat 20
 <210>6317
 <211>20
 <212>DNA
 <400>6317
 ggtgattgat gataacgggg 20
 <210>6318
 <211>20
 <212>DNA
 <400>6318
 gcactccaaa actcaaggag 20
 <210>6319
 <211>20
 <212>DNA
 <400>6319
 ggtagccaaa gaagctccta 20
 <210>6320
 <211>20
 <212>DNA
 <400>6320
 gaccacatgt ggatagagac 20
 <210>6321
 <211>20
 <212>DNA
 <400>6321
 ccacacccaaa acactatgcc 20
 <210>6322
 <211>20
 <212>DNA
 <400>6322
 caacatgccc atatcggtc 20
 <210>6323
 <211>20
 <212>DNA
 <400>6323
 ggggacaaaag tcacagacta 20
 <210>6324

<211>20
<212>DNA
<400>6324
aagccatctg ttttgctgga 20
<210>6325
<211>20
<212>DNA
<400>6325
gccactcttc attcagagac 20
<210>6326
<211>20
<212>DNA
<400>6326
ggggagctgt tttatgttcg 20
<210>6327
<211>20
<212>DNA
<400>6327
gcccgggaag ctccataaat 20
<210>6328
<211>20
<212>DNA
<400>6328
gcaggagttg ctaatctagg 20
<210>6329
<211>20
<212>DNA
<400>6329
cctgagggtc taaatacaac 20
<210>6330
<211>20
<212>DNA
<400>6330
ggaagctctt cctttgctca 20
<210>6331
<211>20
<212>DNA
<400>6331
gaaggtcgct tccaaactga 20
<210>6332
<211>20
<212>DNA
<400>6332
ccgttttcga agttgatggc 20
<210>6333
<211>20
<212>DNA
<400>6333
gcagaacttg aagctgaagg 20
<210>6334
<211>20
<212>DNA
<400>6334
ccatccacgg tttgcagaat 20
<210>6335
<211>20
<212>DNA
<400>6335
atctgagcca ctgtgggagg 20
<210>6336
<211>20
<212>DNA
<400>6336
cgccttaggg tcaaacccttc 20

<210>6337
<211>20
<212>DNA
<400>6337
cggggcacttt ccttcccaga 20
<210>6338
<211>20
<212>DNA
<400>6338
ctcgccttctc ttcacacagca 20
<210>6339
<211>20
<212>DNA
<400>6339
cgtgttttcag gatgtagacc 20
<210>6340
<211>20
<212>DNA
<400>6340
gtccaaggga cttccctttt 20
<210>6341
<211>20
<212>DNA
<400>6341
catcattggt tgatgggcac 20
<210>6342
<211>20
<212>DNA
<400>6342
gacgctgttt gcaggacatt 20
<210>6343
<211>20
<212>DNA
<400>6343
cctactcagc agctactagc 20
<210>6344
<211>20
<212>DNA
<400>6344
gcctgcagtt ttccgacttc 20
<210>6345
<211>20
<212>DNA
<400>6345
cctggcgtcc tttaccagtg 20
<210>6346
<211>20
<212>DNA
<400>6346
cttccttcgt catggtgtga 20
<210>6347
<211>20
<212>DNA
<400>6347
cttctggtac gcgctttaca 20
<210>6348
<211>20
<212>DNA
<400>6348
ccggcacggt ctgtaaattc 20
<210>6349
<211>20
<212>DNA
<400>6349

gagtttgaca atggteycta 20
<210>6350
<211>20
<212>DNA
<400>6350
gagttctgtg cctgaatgac 20
<210>6351
<211>20
<212>DNA
<400>6351
gttgtegcac ttccgttctt 20
<210>6352
<211>20
<212>DNA
<400>6352
gagtggatct tcacaaggtc 20
<210>6353
<211>20
<212>DNA
<400>6353
cccccgtaga aagcaaagaa 20
<210>6354
<211>20
<212>DNA
<400>6354
ccgcggcacc aaagaaataa 20
<210>6355
<211>20
<212>DNA
<400>6355
cctgagctcg tatagttcca 20
<210>6356
<211>20
<212>DNA
<400>6356
cgatgtggat acgcaacgaa 20
<210>6357
<211>20
<212>DNA
<400>6357
cttgaggaaa aggtgtggga 20
<210>6358
<211>20
<212>DNA
<400>6358
cagaccaagt tgttaagagc 20
<210>6359
<211>20
<212>DNA
<400>6359
cgatgtggat acgcaacgaa 20
<210>6360
<211>20
<212>DNA
<400>6360
cgactgatcg gttcctagaa 20
<210>6361
<211>20
<212>DNA
<400>6361
cgaggatcca cttcaatagc 20
<210>6362
<211>20
<212>DNA

<400>6362
 cggtgcaaca tacaaggcat 20
 <210>6363
 <211>20
 <212>DNA
 <400>6363
 cagaaactcg gagagggagg 20
 <210>6364
 <211>20
 <212>DNA
 <400>6364
 ggggagcaga aaggatgtaa 20
 <210>6365
 <211>20
 <212>DNA
 <400>6365
 gccatccatt ccatgttcac 20
 <210>6366
 <211>20
 <212>DNA
 <400>6366
 cgcctatgat ctgaaaagcg 20
 <210>6367
 <211>20
 <212>DNA
 <400>6367
 tagaggatta cgcggaactc 20
 <210>6368
 <211>20
 <212>DNA
 <400>6368
 cacgacgcct gttaaatgag 20
 <210>6369
 <211>20
 <212>DNA
 <400>6369
 cgctactctc attggaaagc 20
 <210>6370
 <211>20
 <212>DNA
 <400>6370
 cgttcgtaat gatcgccct 20
 <210>6371
 <211>20
 <212>DNA
 <400>6371
 ctctcttcag gattcgcgtt 20
 <210>6372
 <211>20
 <212>DNA
 <400>6372
 gcagggagaa ccatgacccc 20
 <210>6373
 <211>20
 <212>DNA
 <400>6373
 ctgcattccg gttctccata 20
 <210>6374
 <211>20
 <212>DNA
 <400>6374
 caagggtat ggtccctaaa 20
 <210>6375
 <211>20

```

<212>DNA
<400>6375
cggctcttaag atcccttgag      20
<210>6376
<211>20
<212>DNA
<400>6376
gtacgcacga atgtctgcta      20
<210>6377
<211>20
<212>DNA
<400>6377
ggatcgttgc tattggcaac      20
<210>6378
<211>20
<212>DNA
<400>6378
caggtaatac tgcctcagc      20
<210>6379
<211>20
<212>DNA
<400>6379
gtagctccta tcgtattgcc      20
<210>6380
<211>20
<212>DNA
<400>6380
ctccttctca aaagcgactc      20
<210>6381
<211>20
<212>DNA
<400>6381
gctgtagctc tacaaactcc      20
<210>6382
<211>20
<212>DNA
<400>6382
ctgcttaaaa agagaagctc      20
<210>6383
<211>20
<212>DNA
<400>6383
tctgatagcg ctcttcgaga      20
<210>6384
<211>20
<212>DNA
<400>6384
cttgcaccca caagacactg      20
<210>6385
<211>20
<212>DNA
<400>6385
ctgtccatga gtttcgtgac      20
<210>6386
<211>20
<212>DNA
<400>6386
ctgggtttcgg tgacagaaga      20
<210>6387
<211>20
<212>DNA
<400>6387
gcccataacc ctctgtttct      20
<210>6388

```

<211>20
<212>DNA
<400>6388
gttttttggac ttcgtcctgt 20
<210>6389
<211>20
<212>DNA
<400>6389
ccgctcttct attctcttcc 20
<210>6390
<211>20
<212>DNA
<400>6390
cgcaagctct gattgcatg 20
<210>6391
<211>20
<212>DNA
<400>6391
ctgtgttgaa ggatcatgga 20
<210>6392
<211>20
<212>DNA
<400>6392
acataagcct cacgcacttc 20
<210>6393
<211>20
<212>DNA
<400>6393
gcgctcaaaa tgacgggcgt 20
<210>6394
<211>20
<212>DNA
<400>6394
ctagcgatac gctacctctt 20
<210>6395
<211>20
<212>DNA
<400>6395
ggtccgacaa aagactgggt 20
<210>6396
<211>20
<212>DNA
<400>6396
gttctagtgc aggtataggg 20
<210>6397
<211>20
<212>DNA
<400>6397
gcggaggtag attaattgtca 20
<210>6398
<211>20
<212>DNA
<400>6398
caggggaagat tagcccagaa 20
<210>6399
<211>20
<212>DNA
<400>6399
cggagattcg gtatcaacca 20
<210>6400
<211>20
<212>DNA
<400>6400
ttcgaacccc cgacctattg 20

<210>6401
<211>20
<212>DNA
<400>6401
gtacctaaaga attcgtgcgt 20
<210>6402
<211>20
<212>DNA
<400>6402
gaccttgact tgctccaact 20
<210>6403
<211>20
<212>DNA
<400>6403
gggacttgta gctacaacga 20
<210>6404
<211>20
<212>DNA
<400>6404
gtcccatgct cgattgagtt 20
<210>6405
<211>20
<212>DNA
<400>6405
tacagttcag ggagccttag 20
<210>6406
<211>20
<212>DNA
<400>6406
cttcagagta cttacggcca 20
<210>6407
<211>20
<212>DNA
<400>6407
gtgaactgag tggctcaaca 20
<210>6408
<211>20
<212>DNA
<400>6408
gctctttgcc gaagagttct 20
<210>6409
<211>20
<212>DNA
<400>6409
gatcgtaggt gagggagatg 20
<210>6410
<211>20
<212>DNA
<400>6410
gatgagctct gtgctcgatt 20
<210>6411
<211>20
<212>DNA
<400>6411
gctcctcttc gtttgacgat 20
<210>6412
<211>20
<212>DNA
<400>6412
ccttactcct tctactcagg 20
<210>6413
<211>20
<212>DNA
<400>6413

gttttgttgt gttggccttt 20
<210>6414
<211>20
<212>DNA
<400>6414
ggttctgata gtgagataga 20
<210>6415
<211>20
<212>DNA
<400>6415
gagatgcaga agcgcaatct 20
<210>6416
<211>20
<212>DNA
<400>6416
cgatggagat ccagagggga 20
<210>6417
<211>20
<212>DNA
<400>6417
gaaaaagggt tgatcttgtg 20
<210>6418
<211>20
<212>DNA
<400>6418
gccatcgtca gaaacaccaa 20
<210>6419
<211>20
<212>DNA
<400>6419
aagaagacta tgacgggtgg 20
<210>6420
<211>20
<212>DNA
<400>6420
gagaagccac aaaatctgcc 20
<210>6421
<211>20
<212>DNA
<400>6421
cgttaaattt ccgagccagc 20
<210>6422
<211>20
<212>DNA
<400>6422
gttgcctgca tcaaagtctc 20
<210>6423
<211>20
<212>DNA
<400>6423
cgcaatctcc cagcaatcta 20
<210>6424
<211>20
<212>DNA
<400>6424
cgacacttct catgtcccta 20
<210>6425
<211>20
<212>DNA
<400>6425
ccattctttg gaatgtaggc 20
<210>6426
<211>20
<212>DNA

<400>6426
ctacgtgttc tcccgtttgt 20
<210>6427
<211>20
<212>DNA
<400>6427
ctcttgctgc ggatcttgaa 20
<210>6428
<211>20
<212>DNA
<400>6428
acaaggctgc agtcctgcca 20
<210>6429
<211>20
<212>DNA
<400>6429
cggctctcttg cgatcttaga 20
<210>6430
<211>20
<212>DNA
<400>6430
cgaagtgtgg actcttcttc 20
<210>6431
<211>20
<212>DNA
<400>6431
ccatgcaagt taacttcacc 20
<210>6432
<211>20
<212>DNA
<400>6432
cctttttcccc atctatcctc 20
<210>6433
<211>20
<212>DNA
<400>6433
gtcctccaca aagtcttacc 20
<210>6434
<211>20
<212>DNA
<400>6434
gcttcgactc cggaatgtaa 20
<210>6435
<211>20
<212>DNA
<400>6435
cagccccagg atgcgatgag 20
<210>6436
<211>20
<212>DNA
<400>6436
ctagagttta agaaccctgg 20
<210>6437
<211>20
<212>DNA
<400>6437
caccgcacg tcttgatgat 20
<210>6438
<211>20
<212>DNA
<400>6438
ctgtcgaaga gtaggaagac 20
<210>6439
<211>20

<212>DNA
<400>6439
aaattctggt gtgggtcgct 20
<210>6440
<211>20
<212>DNA
<400>6440
tgatcttcgg gtaatggacc 20
<210>6441
<211>20
<212>DNA
<400>6441
cgaaattcgg aagccacttc 20
<210>6442
<211>20
<212>DNA
<400>6442
caccatctcc tcgcgaatta 20
<210>6443
<211>20
<212>DNA
<400>6443
gtactctcca atcccttcca 20
<210>6444
<211>20
<212>DNA
<400>6444
gaaccaggtg tacgagtctt 20
<210>6445
<211>20
<212>DNA
<400>6445
tggaaccggt gactcgctat 20
<210>6446
<211>20
<212>DNA
<400>6446
gcgcagtgaa acctatgcaa 20
<210>6447
<211>20
<212>DNA
<400>6447
cctgacgacc tcaaaatctc 20
<210>6448
<211>20
<212>DNA
<400>6448
gctccattct tatctgggtg 20
<210>6449
<211>20
<212>DNA
<400>6449
tggtgacgcc aatcaagccg 20
<210>6450
<211>20
<212>DNA
<400>6450
tatccaccca gcgttacgcc 20
<210>6451
<211>20
<212>DNA
<400>6451
tgtctacacg gaacgtccta 20
<210>6452

<211>20
<212>DNA
<400>6452
cactgtactt gctggggatt 20
<210>6453
<211>20
<212>DNA
<400>6453
ctgtggcagc actgagtttt 20
<210>6454
<211>20
<212>DNA
<400>6454
gacatatcct cccaagaag 20
<210>6455
<211>20
<212>DNA
<400>6455
acaaagctat cttggcgagc 20
<210>6456
<211>20
<212>DNA
<400>6456
cacctttagg agctgtacct 20
<210>6457
<211>20
<212>DNA
<400>6457
caccgccatt atccgttgaa 20
<210>6458
<211>20
<212>DNA
<400>6458
ccagcagcag aacgcaaagc 20
<210>6459
<211>20
<212>DNA
<400>6459
aaagagccga tacgctcggg 20
<210>6460
<211>20
<212>DNA
<400>6460
gtagaagccc ctgtcccca 20
<210>6461
<211>20
<212>DNA
<400>6461
gagaggaaag gctagagatg 20
<210>6462
<211>20
<212>DNA
<400>6462
ccgagatctg cagaaatgct 20
<210>6463
<211>20
<212>DNA
<400>6463
ctccgccatt tgtagttgct 20
<210>6464
<211>20
<212>DNA
<400>6464
ctcgtagtat tgccctcgaa 20

<210>6465
<211>20
<212>DNA
<400>6465
ccgctagatt gaagaggtct 20
<210>6466
<211>20
<212>DNA
<400>6466
cgcgctagaa tgacgataac 20
<210>6467
<211>20
<212>DNA
<400>6467
cccttaacag gagaatagcc 20
<210>6468
<211>20
<212>DNA
<400>6468
cgcgctagaa tgacgataac 20
<210>6469
<211>20
<212>DNA
<400>6469
agtggttgcg gcatggagta 20
<210>6470
<211>20
<212>DNA
<400>6470
tgcagcattc ccagaagtct 20
<210>6471
<211>20
<212>DNA
<400>6471
ggatagcacg ctgatcaaca 20
<210>6472
<211>20
<212>DNA
<400>6472
gcttatcctt acgctatggc 20
<210>6473
<211>20
<212>DNA
<400>6473
gattgtttcc gtgggtgctc 20
<210>6474
<211>20
<212>DNA
<400>6474
gctcttggga tctttgcgaa 20
<210>6475
<211>20
<212>DNA
<400>6475
gcatctagcg tgctatcctt 20
<210>6476
<211>20
<212>DNA
<400>6476
gttgctgttg ctgttgctga 20
<210>6477
<211>20
<212>DNA
<400>6477

cactgcctga gattatcac 20
<210>6478
<211>20
<212>DNA
<400>6478
taaggctcgtt cctgcatcca 20
<210>6479
<211>20
<212>DNA
<400>6479
acctccaatc caaatccctg 20
<210>6480
<211>20
<212>DNA
<400>6480
gcctcagcaa agaaagcttg 20
<210>6481
<211>20
<212>DNA
<400>6481
ggagagtagc tggtaaggta 20
<210>6482
<211>20
<212>DNA
<400>6482
ggatagacac gttgaccaga 20
<210>6483
<211>20
<212>DNA
<400>6483
tgtgaaggct tggtttctcg 20
<210>6484
<211>20
<212>DNA
<400>6484
agagcgagtt ccccagcaga 20
<210>6485
<211>20
<212>DNA
<400>6485
ggtccagttg atgcttccta 20
<210>6486
<211>20
<212>DNA
<400>6486
gcggtggtaa gttcaagaag 20
<210>6487
<211>20
<212>DNA
<400>6487
aggttggtac cataggccat 20
<210>6488
<211>20
<212>DNA
<400>6488
ggagtttgtg caagggtatt 20
<210>6489
<211>20
<212>DNA
<400>6489
tgccgcagct cctgcattcg 20
<210>6490
<211>20
<212>DNA

<400>6490
aatgggagtg acaagagtcg 20
<210>6491
<211>20
<212>DNA
<400>6491
ccttcagtct gtgtgaaacc 20
<210>6492
<211>20
<212>DNA
<400>6492
gagtcctcgt tgctgataga 20
<210>6493
<211>20
<212>DNA
<400>6493
ctgtagactg cctggaactt 20
<210>6494
<211>20
<212>DNA
<400>6494
gagaaattgg tagccgtggc 20
<210>6495
<211>20
<212>DNA
<400>6495
gcgcctccat tgtcattaga 20
<210>6496
<211>20
<212>DNA
<400>6496
cccaccacta gtaattgctg 20
<210>6497
<211>20
<212>DNA
<400>6497
gcaagagtta gaggttgctg 20
<210>6498
<211>20
<212>DNA
<400>6498
ggcttaaagc agtgtgtggg 20
<210>6499
<211>20
<212>DNA
<400>6499
gcaagttcca gagcgcaacc 20
<210>6500
<211>20
<212>DNA
<400>6500
ctgcataggc agaagctcta 20
<210>6501
<211>20
<212>DNA
<400>6501
gccgagtttt tctctagacg 20
<210>6502
<211>20
<212>DNA
<400>6502
gagattcccc tcaggcagta 20
<210>6503
<211>20

<212>DNA
<400>6503
cacgtactct gcctttcttg 20
<210>6504
<211>20
<212>DNA
<400>6504
ttcagatcga ggcttctgga 20
<210>6505
<211>20
<212>DNA
<400>6505
ggggaaaaaac gcaaataaccg 20
<210>6506
<211>20
<212>DNA
<400>6506
ccaagcgatt caaggtgtca 20
<210>6507
<211>20
<212>DNA
<400>6507
tcaggaaacc aagctgtagc 20
<210>6508
<211>20
<212>DNA
<400>6508
ctcaataagg ctgatgcagg 20
<210>6509
<211>20
<212>DNA
<400>6509
cagcctgtaa ctctaactgc 20
<210>6510
<211>20
<212>DNA
<400>6510
ggggaaaaaac gcaaataaccg 20
<210>6511
<211>20
<212>DNA
<400>6511
cggctcctac cctcttctcg 20
<210>6512
<211>20
<212>DNA
<400>6512
aagctgtagc taatggcgga 20
<210>6513
<211>20
<212>DNA
<400>6513
ccgttgtgct aggagaggaa 20
<210>6514
<211>20
<212>DNA
<400>6514
gtcctcctt ttgttgatga 20
<210>6515
<211>20
<212>DNA
<400>6515
gctgcttaag acctaaggag 20
<210>6516

<211>20
<212>DNA
<400>6516
ccaagttgcc gtggcctctt 20
<210>6517
<211>20
<212>DNA
<400>6517
ggggaatttc cctaggggaat 20
<210>6518
<211>20
<212>DNA
<400>6518
tccgatatcc ccctgcacga 20
<210>6519
<211>20
<212>DNA
<400>6519
gatctccgct tttcacggat 20
<210>6520
<211>20
<212>DNA
<400>6520
tgtgtgcata gagggaccta 20
<210>6521
<211>20
<212>DNA
<400>6521
acgaagggtcc tcgagtcgtg 20
<210>6522
<211>20
<212>DNA
<400>6522
gcagatggat ggagtttgtg 20
<210>6523
<211>20
<212>DNA
<400>6523
catagagggga cctatctctg 20
<210>6524
<211>20
<212>DNA
<400>6524
gtgccatcca aagaatccag 20
<210>6525
<211>20
<212>DNA
<400>6525
cgccctattg ctaaagcaac 20
<210>6526
<211>20
<212>DNA
<400>6526
ccctctagga tcagaaagtg 20
<210>6527
<211>20
<212>DNA
<400>6527
tgatcgctgc agatcccgtg 20
<210>6528
<211>20
<212>DNA
<400>6528
tagggagatt gctgatagcc 20

<210>6529
<211>20
<212>DNA
<400>6529
cccataggga gattgctgat 20
<210>6530
<211>20
<212>DNA
<400>6530
gctggatgct tgtactagca 20
<210>6531
<211>20
<212>DNA
<400>6531
gcctcctgag aagaatctcg 20
<210>6532
<211>20
<212>DNA
<400>6532
tgcggcagaa agtagcgcat 20
<210>6533
<211>20
<212>DNA
<400>6533
caacacggtt cgtagtgaag 20
<210>6534
<211>20
<212>DNA
<400>6534
cagatgctgg agaataggca 20
<210>6535
<211>20
<212>DNA
<400>6535
cgaagttggc aaggttccca 20
<210>6536
<211>20
<212>DNA
<400>6536
ttagcacaga tggctccgcc 20
<210>6537
<211>20
<212>DNA
<400>6537
ctccttgtgc agatagagac 20
<210>6538
<211>20
<212>DNA
<400>6538
gccagaggtc ttgtaagaag 20
<210>6539
<211>20
<212>DNA
<400>6539
gtaacgctcg ggatctaaga 20
<210>6540
<211>20
<212>DNA
<400>6540
agagcttagc gatgaaggct 20
<210>6541
<211>20
<212>DNA
<400>6541

ggtaagctga cctgagccc 20
<210>6542
<211>20
<212>DNA
<400>6542
gggatgcaaa gcagatcgta 20
<210>6543
<211>20
<212>DNA
<400>6543
gagtagcgaa gccagaaca 20
<210>6544
<211>20
<212>DNA
<400>6544
gaggcttcag taacagatgc 20
<210>6545
<211>20
<212>DNA
<400>6545
gctctagacg ccgtgataaa 20
<210>6546
<211>20
<212>DNA
<400>6546
gtttcatctg ctgcagactc 20
<210>6547
<211>20
<212>DNA
<400>6547
gcccatttct ggtaaagacc 20
<210>6548
<211>20
<212>DNA
<400>6548
ggagaaagac gtagttgtcg 20
<210>6549
<211>20
<212>DNA
<400>6549
aggggtgatt aaggccatcc 20
<210>6550
<211>20
<212>DNA
<400>6550
ctctattgag agacgggcgt 20
<210>6551
<211>20
<212>DNA
<400>6551
cgaggggtatt cgcacttcaa 20
<210>6552
<211>20
<212>DNA
<400>6552
gcccgtctct gtaatgaaac 20
<210>6553
<211>20
<212>DNA
<400>6553
agagagtcgc tgtggctcct 20
<210>6554
<211>20
<212>DNA

<400>6554
gtgagcactt ttatcgagcc 20
<210>6555
<211>20
<212>DNA
<400>6555
gaagaagcca gagaaccagt 20
<210>6556
<211>20
<212>DNA
<400>6556
cggccaaaac tgcagaagat 20
<210>6557
<211>20
<212>DNA
<400>6557
gtaaaacagg cgatctggag 20
<210>6558
<211>20
<212>DNA
<400>6558
gatcgttctg aaggggaagtc 20
<210>6559
<211>20
<212>DNA
<400>6559
acccttttag agcaggctct 20
<210>6560
<211>20
<212>DNA
<400>6560
taagccggga gaaagagggg 20
<210>6561
<211>20
<212>DNA
<400>6561
agactgagaa ggcgttaggt 20
<210>6562
<211>20
<212>DNA
<400>6562
ctatctcgtg ttctgcacga 20
<210>6563
<211>20
<212>DNA
<400>6563
gtcgttcctt tctgtcaacg 20
<210>6564
<211>20
<212>DNA
<400>6564
gtgcagaatc actatcccca 20
<210>6565
<211>20
<212>DNA
<400>6565
gtttactgtc gttcgacagc 20
<210>6566
<211>20
<212>DNA
<400>6566
cctatagacc tgacgaccc 20
<210>6567
<211>20

<212>DNA
<400>6567
gcaccttctg aggagaacaa 20
<210>6568
<211>20
<212>DNA
<400>6568
cagctagcgt cagataggat 20
<210>6569
<211>20
<212>DNA
<400>6569
ggaagatttt gcctctggag 20
<210>6570
<211>20
<212>DNA
<400>6570
cgcggttttat ggaatccgca 20
<210>6571
<211>20
<212>DNA
<400>6571
cacagtgctt gccatctatc 20
<210>6572
<211>20
<212>DNA
<400>6572
ctgcacgaag gtttgggaaa 20
<210>6573
<211>20
<212>DNA
<400>6573
cgcaacccaa gtctgcaaat 20
<210>6574
<211>20
<212>DNA
<400>6574
gggatacaga catgcgtagt 20
<210>6575
<211>20
<212>DNA
<400>6575
tcagatcgtg cgagtagaac 20
<210>6576
<211>20
<212>DNA
<400>6576
ggaagcaaca ttccgaagca 20
<210>6577
<211>20
<212>DNA
<400>6577
gcgcatactc gttcacaaat 20
<210>6578
<211>20
<212>DNA
<400>6578
gtgcccgaatt ctgcttgatt 20
<210>6579
<211>20
<212>DNA
<400>6579
gcaggccagc cccgcaccat 20
<210>6580

<211>20
<212>DNA
<400>6580
accagtttgc atagagcagc 20
<210>6581
<211>20
<212>DNA
<400>6581
ggtggttagca ctataacctg 20
<210>6582
<211>20
<212>DNA
<400>6582
ggagtctttg acactagagg 20
<210>6583
<211>20
<212>DNA
<400>6583
aggcaggtgc tgcctgtag 20
<210>6584
<211>20
<212>DNA
<400>6584
gtgaagtctc cattacaggc 20
<210>6585
<211>20
<212>DNA
<400>6585
ctccccagtt tccttgattg 20
<210>6586
<211>20
<212>DNA
<400>6586
tacgaagcgc accccctcca 20
<210>6587
<211>20
<212>DNA
<400>6587
gaaccacgga agctcaacat 20
<210>6588
<211>20
<212>DNA
<400>6588
gctgctgcta atgtatggct 20
<210>6589
<211>20
<212>DNA
<400>6589
ccatcctcgt agtggtagtt 20
<210>6590
<211>20
<212>DNA
<400>6590
ctgggttata tcgtgaccga 20
<210>6591
<211>20
<212>DNA
<400>6591
cctccaaagc tggaatcttc 20
<210>6592
<211>20
<212>DNA
<400>6592
tccatcctcg tagtggtagt 20